

BRITISH SCHOOL OF ARCHAEOLOGY IN EGYPT

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G E R A R

BY

FLINDERS PETRIE, K.T., F.R.S., F.B.A.

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# GERAR.

## INTRODUCTION.

1. THE consideration in choosing a site for the work of the British School was the widening of our historical view of Egypt. Within that land each period had by now been studied sufficiently to define the history of the civilisation and products, except in the Hyksos age; but the most likely site for that I was debarred from working, by officialism. The links of Egyptian rule northward, therefore, seemed the most needful field for work. The great site for that purpose—at Byblos—was closed by the French occupation, and therefore the Egyptian border in the south of Palestine was the best area open to us.

2. We started work by settling at Gaza and inspected the district. At Gaza itself the city wall was examined, where partly exposed, disclosing twenty-seven feet height of brickwork, built in the Canaanite and Egyptian periods. The ground within that part, however, was *wakf* property, and therefore unavailable. Elsewhere we dug in the ravine running through the modern cemetery, but found only Roman material above the natural field level of the country. Outside of Gaza were two promising sites—Tell Sheriah, probably Sharuhén of the Hyksos, and Tell Gemmeh, probably Gerar. Both are certainly of early origin, and at Tell Gemmeh the absence of any obstruction by a modern cemetery made it the more practicable site. We reached Gaza on 26 November 1926; Mr. Starkey and Mr. Harding went to Tell Gemmeh on 5 December, to build huts, and we finally settled there on 17 December; the work on the site was closed on 15 May, 1927.

3. Our English party numbered eight in all. Mr. (with Mrs.) Starkey in charge of local arrangements and oversight of work; Lieut. (with Mrs.) Risdon and Mr. Harding directing men; my wife

superintending and daily registering workers, and paying them; myself making plans, drawings, and photographs, and arranging the work. During most of the time we had the kind help of Dr. Parker, who looked after the health and repair of the men as well as ourselves. The English police officials were most courteous and helpful, and especially we must thank Mr. Atkins, A.D.S.P. of Gaza, for taking charge of our camp outfit when we left. At Jerusalem, our friends Bishop MacInnes and Mr. Harold Wiener each helped forward our affairs personally, and assisted us in meeting other archaeologists.

## CHAPTER I

### THE MOUND AND THE WORK.

4. THE mound of Tell Gemmeh stands eight miles south of Gaza, and nearly as far from the sea, at the south side of the Wady Ghuzzeh, about a mile above the branching of the Wady Sheriah. The mound at present consists of fifty feet depth of ruins, upon a natural hill fifty feet high above the Wady. On pl. iii, in the view of the cliff, the darker band is the top of the natural hill. The formation of this site seems to have been due to a deposit of loam with shells washed down the Wady Ghuzzeh into an estuary at about 160 ft. O.D. This land was next raised considerably, and then denuded, leaving bluffs at intervals near the stream. One such bluff was settled as Tell Gemmeh, another such rise stands about two miles farther up, and a third at three miles farther down. In Roman times there appears to have been another submersion up to 125 ft. O.D., leaving a bed of similar loam and shells around the Tell, as will be noted at the close of this volume.



5. That this mound of Tell Gemmeḥ is the site of the ancient Gerar is indicated by the name of the district El Jura around it, and by the name of a daughter-town Umm Jerar, entirely of Roman age, at a couple of miles down stream. Just the same relationship is seen at Lachish, now called Tell el Hesḥ (from the gravel, *hesḥ*) while the daughter-town of Umm Lakis, entirely of Roman age, is at two or three miles distant. These later settlements called themselves "her mother is Lachish" or "Gerar" with apparently a pride in the connection.

6. The present shape of the city of Gerar is recorded on pl. iv, but this was by no means the ancient form, for it has been certainly much denuded by wind and rain in the last two thousand years, as we shall notice below. The cause of this denudation, much greater than on other sites, is the frequent drought which prevents any continuous vegetation. The mound was probably circular, or nearly so, and it has been washed away deeply on two sides, forming hollow bays. The outline of the present top is marked as a band of hatching on pl. iv, but not all at exactly the same level, as it varies five or six feet from the higher end at the north-west. Outside of that hatching is a dotted line marking the limit of artificial ground, below which is the native hill. Farther out is a broken line in the approximate position of the base of the slope. The stream-lines of denudation are marked with arrows down the course. None of these details are of any ancient significance, they only show the condition to which the mound has been reduced in the present age, and are merely recorded to explain the present conditions of work. The lightly shaded area at the north-west, on the top of the mound, shows the limits of the present excavation, and the square outline within it is the position of the fort of Psamtek.

Work was begun at this north-west end of the town, as by its aspect looking to the sea-breeze that seemed the part most likely to contain important buildings. In order to ensure getting through all the levels, so as to complete the series in the time, the area of clearance was limited to what we could hope to finish, although walls of building appeared all over the mound. The temptation to follow on in various directions had to be resisted, and finally the area was limited much more closely, in order to reach the bottom of the

rubbish of the earlier accumulations which are without walls. By so doing, we reached the native soil in the heart of the mound at the same level as it was seen at the edges.

7. Each of the separate building levels that was found was planned on a scale of 1 to 100, upon squared paper ruled in tenths of inches, as the work went on, and the levels of the top and base of each piece of wall were marked on the plan. The successive plans were all made by taping from three fixed points (marked here as W, F, N), which were carried down in each stage by plumb bobs, through the thirty feet of ruins. In this way all the plans are keyed together, and the superposition of all the buildings is fixed. On each plan here, pls. vi to xiii, the current building is in solid black, and the outlines of the building next below it are also entered, so as to show if any relation existed between them. Nearly all the buildings had been ruined and broken down each time before a later town was placed on the site.

For purposes of reference, two letters were assigned to each chamber or area as the work went on, the first letter that of the town level, the second that of the chamber. Every object found (some 1500 in all), was marked with the letters of its source, and its level in feet, all levels being from O.D. Each object was drawn in outline as soon as possible, and its letters and level stated. Thus, in the plans and the drawings for publication, there was a complete register of results, without any card catalogue or note books. Only occasional detail needed to be put in writing, usually upon the drawings. In this way, there was no loss of time in mere scaffolding which is useless after the results are published. On each plan there are placed small crosses at fifty feet apart to serve for reference; the identification of these will be by the three survey points, W, F, N.

8. For the work of digging, we brought half a dozen old hands from Egypt to train the new men, and as soon as our intentions were known, workers flocked up from several miles away over the almost desert waste. They were mostly agricultural Bedawy, hitherto unused to regular work, but they took it up readily, and in a few weeks were efficiently breaking up the hard earth with pick-axes. At first we had one basket boy to each man, but as the work went forward, further in from the tip heaps at the edge, more carrying power was needful. We were told that we could

not get so many children, as the Arabs have but small families in their hard life; but by refusing any man who could not bring in three children with him, the numbers were provided. Two large rooms were dug in the shelter of the hill, and roofed with iron, for the boys and the girls who came from a distance. At first they were rather limp, having only done goat-herding before; but the result of steady pay was to improve their condition, and latterly they worked well. It proved best, with such a multitude of children, to have a break of ten minutes in the middle of the morning, and also in the afternoon. When the work was fully organized, there were about 90 men and 270 children in the acre area of digging. Continual watching is needful for keeping up the best conditions, so that there is no block in the gangways nor loitering at the tip heap; also for avoiding any hindrances, for changing paths as the work-face shifts, and making every one feel that they are kept in touch and helped as much as possible in the ordering of things. Without any urging, the workers all kept early hours; often I have been on the mound well before sunrise, and found half the picks and baskets going, with many smiles and nods, while the rest of the people were hurrying up on all sides in the twilight. Work ended at sunset, and the mid-day rest was lengthened out to three hours as the days grew hotter and longer. These people proved very amenable, cheerful, good-natured, and pleasant to work with, and we never had any trouble with them. Wages were lower than in the north, eight piastres for men, and from three to five for children according to their height. This was supplemented by bakhshish for everything that was found, any gold or silver being weighed and paid for as metal. These payments were not so much for honesty, as the district is not spoiled by dealers, but were given for a sharp look-out, and care in not breaking things.

The district south of Gaza borders on the desert. In a rainy year there is enough moisture to raise a large and profitable crop. Yet there can never be a permanent population of any size, for in many years the rain is scanty. Last winter there was no rain till February, and then only about six inches, so that merely a feeble crop of fodder could be raised, and nothing for human food. The population had to pack up tents and go north, along the old desert road, where one sometimes

saw a continuous stream of camels, donkeys, and horses, laden with the goods of their owners, who tramped with them in search of food. Our providing over a hundred pounds a week of wages enabled a large number to hold their homes, and hope for a better season. Yet in spite of this hardship, there was not a single raid of the desert tribes, so thorough is the peace ensured by the new police.

## CHAPTER II

### THE BASES OF DATING.

9. BEFORE entering on the details of the various super-imposed cities, it is necessary to set out clearly what are the absolute dating points, between which the dates are less certainly fixed. The precision of these absolute points is the more definite because we know historically at what times the Egyptians mastered Palestine, and were likely to rebuild a frontier city of such strategic importance. Gerar lies on the direct road from Egypt up to Jerusalem and the hill country; it also flanks the coast road from Egypt, so that it must be held by any who depend on the direct road to Gaza and the north, and it provided a bridle on the Edomite tribes to prevent their raiding the coast road. Its importance therefore makes it one of the most favourable places for fixing the relation of Egypt to the products of Palestine, and so dating them as a basis for the archaeology.

Within a depth of thirty feet, six successive periods of building are found. In each period the plan almost or entirely ignores the previous plan. Each of the six plans is therefore independent, and all are well defined in origination. A further check is the summing up of the number of objects recorded from each separate foot of level.

In these summings there is a sudden increase to double the usual amount at the level of the floors of each period of building, due to objects lost in the rooms before the walls decayed and fell in. The level of each period of building varies only a foot or two, across the site. The levels of the higher and lower bases of walls, and the dates assigned, are as follows, when descending in the mound.

## THE BASES OF DATING

Level of wall base	Maxima of objects	Letters used in plan	Builders	Date B.C.	Dynasty	Years in a foot
204 ft.			Persians	457	XXVII	
197-8	200 ft.	A, B	Psamtek I	660	XXVI	— 32
192-4	194	C, D	Amaziah	810	XXIII	— 32
189-91	190	E, F	Sheshenq I	932	XXII	— 40
183-5	185	G, H	Ramessu III	1194	XX	— 45
175-9	177	J, K	Tehutmes III	1480	XVIII	— 40

10. The evidence for the Persian date is that a granary was built on rubbish containing a red-figure Attic vase which could not be earlier than 460 B.C., and probably was rather later. These granaries were evidently built for supplying an army to invade Egypt, and there was no Persian invasion for more than a century after that early in 455 B.C. Granaries would have to be built in time for the preceding harvest, so therefore in 457 B.C. This may prove to be one of the best datings for this style of vase.

The evidence for the date of the 197-8 building is that the fortress is of the same type as those of Psamtek at Daphnae and Naukratis, and the commonest pottery, of great loop handles, was the same as at Daphnae; a strong fort was necessary to hold back invasions, as the Assyrians had been over here in 675, 674, 671 and 669 B.C., and Psamtek beginning his independence in 664 would naturally fortify his position as soon as he could.

Before that is a building level rather nearer to Sheshenq than to Psamtek, and so about 150 years before Psamtek. There was no Egyptian invasion between the reigns of these kings, and the building is not as regular as that by Egyptians. But in 810 B.C. Amaziah conquered Edom, the only Jewish king who did so after David, and he would probably strengthen this position.

For the date of the 189-91 building there is a group of jewellery (EG at 191 ft.) buried in the floor of a house, which included amulets of the aegis of Bast (see pl. xxi), characteristic of the xxiind dynasty. The building is finely laid with large bricks, upon deep brick foundations in clean sand, in the regular Egyptian manner. As no Egyptian held Palestine between 1200 and 664 except Sheshenq I, this town is dated to his occupation in 932 B.C.

Before that, in the 183-5 building, was a scarab of Ramessu III found at 187 ft. He is more likely to have fortified this place for his Amorite war

(in 1194 B.C.) than Ramessu II, whose fighting was much farther north.

For the date of 175-9 building there was a fine contemporary scarab of Tehutmes III found at 178 ft., and a cutting-out knife found at 177 ft. (pl. xxiii, 7) has the butt of an early type of Tehutmes III (*Tools and Weapons* lxii, 18). Hence this building may be placed in his reign, and probably during his first advance in 1480 B.C.

11. The whole of these exact datings are closely consistent, and the results can be grasped from the diagram, pl. v. The building dates are marked on the scale of years at the right. On the other side of the names is the scale of levels in feet, with the limits of the foundation levels bracketted. At the left are the curves of the frequency of pottery and other objects by which it can be seen where the maxima of the prolific levels occur. The adjustment of the two scales is by the beginning and end, under Tehutmes III and Artaxerxes I. The intermediate points have building levels always within a foot of the date level, and also as near to the maxima of objects. The only exception is Sheshenq I whose maximum is eighteen inches too low for the date, but this is probably due to his deep foundations which encouraged sinking the floors slightly. Of course his wall levels are taken at his ground level, and not to below his sand foundations. The satisfactory result is that the rise of the mound level by rebuildings was remarkably uniform, and we can date by the levels within a foot, or about 40 years. These levels are the material for the key list of dates given at the foot of each plate of objects; but for any more precise result the level of an object should be compared with that of the particular room in which it was found, so as to compensate the slight variations of building levels. It seems very unlikely that any more exact dating can be obtained at any other site, as all the conditions here are so favourable, and therefore it is worth while

to extract every bit of information that can be had from this work. In the levels on the plates of objects, and the cross-tables of plans and objects (pls. lxxix, lxxx) the areas of the great granaries which were sunk deeply through the towns, and the areas of ashes and rubbish, are put in brackets to call attention to their lack of conformity with the regular strata of accumulation.

The curves at the side show the frequency of pottery and of other objects at each foot of level. Thus at 190 feet there are 100 examples of pottery and 66 of other objects, while at 187 feet there are 21 and 22 respectively. The maxima of objects agree with the bases of the walls at 200, 190, 185, and 177 ft.; but there is scarcely any maximum in the Amaziah town, showing that it was stagnant in trade and only a military expansion. From 184 to 175 there is a broken line within the pottery curve, showing the unpainted pottery alone, the space between that and the curve represents the painted pottery. This formed the excess during the times of Ramessu II and Tehutmes III, so the increase was solely due to wealthy officials and traders in those times.

### CHAPTER III

#### PLANS OF THE TOWNS.

##### 12. *The xviii<sup>th</sup> dynasty. Pl. vi.*

The earliest group of buildings that has been disclosed, on pl. vi, are based at 175 to 179 feet, and probably belong to Tehutmes III. His scarab (xix, 20) was at JB 178, and the next building is based at 178, and others nearby at 177 and 179. The cutting-out knife (xxiii, 7) of his period, was at JN 177, and the nearest foundations are at 178. All of these buildings are of the same class; brickwork much worn, plastered with the same yellow clay to cover the denudation by rain. The corners of the walls are founded on single large blocks of coarse limestone, quite undressed and irregular, marked with crossed lines in the plan. The building JA is massive, and scarcely shows the courses. Its west side rises up higher to 181, and beyond that is the end of a building of earlier age rising from 172. At the west of JF is a wall of earlier building based at 173-8. These are probably before the xviii<sup>th</sup> dynasty. The levels of the top and base of walls are parted by a black line between.

The general appearance of this level is shown in pl. viii. The first view is from the north-west, point 34; in the foreground is the small chamber JQ, the flight of steps behind that is only cut for moving the earth. In the second view from the south, point 32, is seen the same small chamber in the left foreground, and the low wall ending in a block of stone. The survey mark N is on the right, and the vertical face of the excavation in shadow. The standpoint of each photograph is marked by a number in a circle, and a short arrow from it shows the direction.

The earlier levels were searched below the JA chamber (see the photograph at the bottom of pl. xvi), and in the JA to JT area, down to native clay at 156 feet. The only structure found was the thick wall of rough stones and clay at 168 to 171.5 marked in the plan. In the earth were several pieces of pottery. The earliest type was the leather-pouch bowl, of Cypriote origin (lxiii 3 to 13), beginning at 160 in JA and extending up to 174 in JF. It therefore ended earlier here than on other sites. It is contemporary with the raised wreath bands on pottery (lxiii, 1, 2). Other pottery is of bowls and jars, but no lamps are found below 178. Some of the earliest pottery was found on the west spur, and in one burial far out to the west.

The most usual remains in the early levels were the flint sickles (pl. xvi). More than four hundred pieces were collected, and from these about eighty sets were re-arranged, with regard to the quality, size, and period. Many of them had the plaster setting still on them, by which they were fastened into a grooved wooden backing; the groove had been about four tenths of an inch wide, and the plaster extended for some way outside it along the flints. It would seem as if the cut ends of straw must have quickly scraped the plaster away. There was much variation in the frequency of the flints. At 158 ft. there are 8 recorded, then at 163 to 168 an average of six in each foot. At 170 to 176 there was an average of 24 in each foot. At 177 to 180 average 36 in a foot. After that fewer, from 15 tailing down to 4 at 187. Thus they were most frequent in the xviii<sup>th</sup> dynasty, perhaps owing to intensive cultivation for Egyptian claims; but they had been very common for some centuries of the Hyksos age.

What period of years before the xviii<sup>th</sup> dynasty these twenty feet of accumulation represent is hard to tell. The town ruins above were filled

up by the washing down of the mud brick walls; buildings of twelve or fifteen feet high had worn down, and were finally levelled over so as to raise the ground five feet, on an average, in about two centuries. If, however, there were but few walls, and those partly of piled stones, the rate of filling up of the site must have been much slower. If we allow something between 60 and 100 years for a foot of rise, that would probably cover the truth. If so, the foundation of the settlement would have been at least at 2700 B.C. or perhaps at 3400: the frequent use of flint sickles would be at about 2000 B.C. or rather earlier.

Shortly before the Tehutmes building, there seems to have been another structure on the north-west, laid out in a different direction. In chambers JC and JD are marked three circles, A, B, C. At these places there were foundation deposits of a burning lamp in a bowl, extinguished by placing another bowl over it—the substitute for child sacrifice at the foundation. The sets of A and B are drawn complete together in pl. li, and these contain the oldest lamps yet found; that in B group is also drawn in side view. Group C was partly broken. Such deposits are usually under the corners or doorways of a building; but the line joining these would lie in quite a different direction to any of the later buildings, or to any walls of this period.

At this point should be noted the Greek letters placed against various walls to distinguish the sizes of the bricks, and so to show which walls were built with bricks of the same size. There were 144 different sets of measures observed, usually taking three or four measurements in each set. The value and variations of each set were plotted in a cross table of lengths and breadths. Thus the different groups could be separated, and 22 groups distinguished were lettered, as shown in the table on pl. lxxii, stated in tenths of an inch.

#### 13. *The xxth dynasty. Pl. vii.*

The previous town had mostly fallen to pieces, and only in a few places was there walling which led to renewal on an old line, as at HJ, HE. The walls with diagonal shading were later additions at a higher level; the thick wall with white lines on black was an older wall rebuilt. The circles show the position of grain pits, which are common in the towns of all periods. In many cases they

have been sunk down through the older walls, as at GD. In GA was the group of gold earrings (pl. i) marking it as a goldsmith's house. This was the artificers' quarter, as close by were the later iron furnaces. The view, pl. viii, from point 31, has the survey pole N in the foreground; the same pole is at the right side of the next view 28; while in the wide view below, 26, the pole F is in front of N. These serve to identify the walls on the plan.

This town was burnt in various parts. The floors of chambers GT, X, Y, Z, were all burnt, at 184.7 to 185.4 level; the burnt stratum goes north, being 187.10 at W, and out to the limit of the mound. On the east in HB the ash bed is between the upper and under walls at 184.1 to .7, 184.10 to 185.2; on the west ridge, pl. xiii, the floors at 184.11 are all burnt. This proves how very level the site of the town was, when, at some hundreds of feet apart, the burning does not vary more than 184.1 to 184.11, except at the north side, where it rises to 187.10. The cause of this burning shortly after 1194 B.C., before rubbish had accumulated in the rooms, was probably the Philistine invasion. This attack would account for the stripping of gold from the front of a statue, and from other ornament, and leaving it hidden also at this same level.

#### 14. *The xxiind dynasty. Pl. ix.*

This period is well defined all over the site by a rebuilding with deep foundations of bricks laid in clean sand, from two to six courses in different buildings. In some parts it is based on earlier walls, as ET-EY upon GA, GO; but mostly it was of new foundation. The group ET, EW, EY looks like a three-chambered sanctuary, and the court EV, EW, before it, is paved with a bed of gravel. But no trace of cult objects was to be found, and the iron furnaces flank it on the west. The east wall of EY is of three stages with two levels of foundation and sand beds between. In the figures of the levels, a dotted line means a course of sand, while a full line separates the top and bottom of a wall. The finest piece of walling is that from EC to ED; see the photograph in pl. xii, from point 25. This building had six courses of bricks in sand, and, over that, it was plastered above ground. Under the corner north of EC, and that south of ED, were pits for foundation

deposits, at 70 inches under the ground level, or 33 and 36 inches under the brick walling. Unfortunately neither pit contained anything but sand, and no objects had been placed there. The northern was 46 inches wide, the southern 36 inches.

The furnaces, planned near F, were probably of earlier date than this town, but not extending quite as deep as the previous town. They would naturally be placed entirely above ground, in order to catch the wind for the draught; see the photographs in pl. xxv. The large circular areas with diagonal broken lines (EJ, EO, &c.) mark where all the walls have been destroyed by digging large granaries of the Persian period, descending about eighteen feet below the ground level of their own age. Lesser areas of grain pits are also marked at Ez, Ed, Eh, and in EY. On the south, the massive building EG runs further south for a long way; but it is partly denuded, and we could not extend work in this direction in the time available. The chambers EK, Es, are a later annex. The road-ways are plain in this layout, from EH to ER, round the corner up to ES, and on past FS, FO, FB; also a lane between EQ and Eh. The corner of EZ is built down into a previous grain pit.

#### 15. *The town of Amaziah. Pl. x.*

This plan retained the outline of the main group at DD, DE, DF, but it blocked the road-way around that. The great building DR survived through, till the xxvith dynasty. Some of the older walls were used for foundations at CN, east to CR, and south to CB. Some rough cobble walls at N, and by DT, show that brickwork was less familiar to these builders than it was to the Egyptians. The large ash beds were rubbish heaps in the town, over an old region of waste, and this part was not cleaned up till the builders of the xxvith dynasty filled up the hole and built chambers BA, BE, BJ, &c. over it in the vth century. The sloping bands of black ash in the hollow can be seen cut through at the high east side of the excavation (at the base of pl. viii). The appearance of the town is seen in the middle photographs of pl. xii. Point 22 is at the east border, and point 21 at the west, looking along the same line of wall past CD, CC to CA, CM. The base of a column in the foreground of 21 is seen in the far distance of 22; it belonged to some rather

later building which has left no other trace. There were other late additions to the place, such as CU, CV, and DA, DB, which do not conform to the general lines. These buildings standing up above the rest, seem to have started the direction of the fort of the next period. An important result at the close of this period is the clump of Assyrian pottery in the old grain pit at DZ, in the south-west corner. This suggests that the Assyrian governor, sometime between 681 and 669, lived in the large building of Sheshenq DR, and the pits behind the house served for the rubbish. For the pottery, see pls. xlvii and lxxv. At the west side of pl. x is the name of Shesha, the Hyksos king, of whom a scarab was found there; this is of course one picked up on the flank of the old city, like others that we found, and re-used later.

#### 16. *The xxvith dynasty. Pl. xi.*

This was the most substantial and regular of all the towns, and is best preserved from having less weight over it. The most striking part is the great square fort like those at Defenneh and Naukratis. Such forts were high masses of store pits, rising about thirty feet, to support the occupation buildings on the top platform. Of all that, only five or six feet of wall remained, in spite of its thickness. It must have been very largely destroyed by 455 B.C., (being then over two centuries old), because the Persians did not hesitate to excavate their great granaries AW and AZ through the mass of the walling. All of the east corner is swept away in the denudation of the mound. There seems to have been an open court in the middle, 35 feet wide, which could not have been roofed. From the mass of brickwork, east of AZ, having a face on the north-east side, it does not seem as if a range of chambers ran along the south-east of the square, like those on the north-west. Along the south-east side there is a band of stonework with a flat top, by AF, with a course of stones rising upon it in one place, here shaded. It is tempting to suppose this band of stonework to be the basis of a stone gateway to the fort, and that the higher stonework is part of a jamb of the gate. If so, however, it would not be in the axis of the court. The south corner of the fort was carefully removed, in search of any deposit. There was under it a small corn-grinder of shelly limestone, too small and of too soft a

material to be anything more than a model; with it were leg bones of a calf. Such objects are constant elements in Egyptian foundation deposits, and so mark the origin of this fort. The Canaanite buried lamp and bowl deposits, and the Assyrian placed inscribed cylinders under corners, so neither of these rivals could be the builders here. At the opposite north corner there was the bottom of a jar placed inverted as a marker for the direction of the wall. Nothing was found at the west corner. On the south-west were side chambers built on to the fort. Some patches of rough stone work occur near AM, AN, and at AX was a rubbish pit with a great amount of broken pottery.

To the north of the fort stood a large building of the same period, from BS to BB, of symmetrical plan, probably the residency. To this was added a thick buttress at the south corner, BC, and a wing on the north-east BH to BA, with still later additions BG, BX. This wing might seem to have been later, as under it was a piece of red-figured Greek pottery, whereas the residency was of the same age as the fort, about two centuries before the date of that pottery. Yet the similarity of plan to that of the residency, and the sizes of the bricks  $\alpha$ ,  $\beta$ ,  $\delta$ , being the same as in the fort and the residency, would seem to indicate that all three parts are of the same age. The piece of later pottery must have been dropped in some hollow, or rubbish hole later than the building.

The views at the base of pl. xii show the forking of the walls of the fort and residency, seen from point 15 near BF. The reason for such divergence is not clear. The residency was parallel to the earlier buildings and roughly square with the north face of the mound. But why the fort should be askew to the earlier axis is not explained, for the slight building DA, DB, to which it does conform seems quite insufficient to determine the place of the largest structure here. It may be that some important buildings, now lost in the denudation, prevented a more regular position. The narrow chamber AB is photographed, last on pl. xii, as a sample of the well marked building of the fort. In several of the walls of this period there were blocks of stone placed at the corners at three to five feet above the ground, in order to prevent loaded animals knocking away the brickwork. An example of this is in pl. xv, 2; the ground has been dug away here by us a couple of feet below the base of the wall. In front of

the main wall is the lower wall of a chamber, see BA, BG, on pl. xi.

#### 17. *The Persian period. Pl. xiii.*

After the fort of Psamtek we do not find any large lay-out of buildings. Egypt was weak in the hands of the Persians, barely able to revolt, and there was no need to fortify in Palestine, but only to store supplies so as to command the road into Egypt. How completely the fort of the xxvith dynasty had perished, is shown by the outline of its thick walls having been worn down to only a few feet, and a block of store-houses having been built entirely regardless of the old line of structure (xv, 1). Probably the thick buttress of the residency was visible, and the new buildings were added on to the south face of it. They were planned in terms of the Phoenician foot of 11.25 inches. These store-houses were not of brickwork, but made by piling layers of rammed clay about four inches thick, with boards on each side to preserve the line. Similar walls were found also to the north-east of our excavations, but all of these were denuded until only eight or ten inches' height remained. In connection with these walls may be named a piece of limestone column, found near the north-eastern walls, at 206 O.D. with feeble lines of moulding around it, see pl. lxvii.

The great granaries are the principal remains of this age. Ten of them were discovered on the mound, one more in the plain on the west, and doubtless many others have vanished in the denuded area, and others are yet to be found in the unexcavated parts. In one of them, a large quantity of grain lay carbonized. The sides are thick, to support the high structure of the conical top, and successive ledges remained in some instances, to base the sloping linings of the cone. The thinner sides of some, shown in the plan, are only due to our not having observed the full thickness, and probably all were originally equal to the thickest here drawn. In one instance (furthest to north-west) the inside was sufficiently preserved to show part of the sloping cover; the inner face was conical, and did not conform in the least to a dome. The section of this was measured from a plumb line, and is shown in solid black on pl. xiv, 2. The innermost layer of the cone had perished, and left a ledge on the wall. The restoration of the form upward is carried out in

conformity with the figures of Assyrian buildings (see VINCENT, *Canaan*, fig. 41) copied here for comparison (xiv, 3). In these, the domed dwelling houses are in the foreground, with the covered smoke hole on the top, while behind these are the tall conical buildings, which can hardly be other than granaries. How the top was finished off cannot be said, but at least it would run up as high as this restoration (fig. 2), according to the Assyrian form, and having regard to the economy of storage. As this form was introduced by the Persians and used in Assyria, it must be regarded as belonging to Mesopotamia. The contents of this restored form of the granary, up to the spring of the top doming, would be 5,900 cubic feet; as a man requires about  $2\frac{1}{2}$  cubic feet of corn for 2 months (or 2 pounds a day), this granary would support 2,360 men for 2 months. Taking the contents of the other granaries as being in proportion to the cube of the diameters, the whole of the visible granaries would have supported 35,000 men for 2 months. Probably there were as many granaries in the destroyed and unexcavated regions as those now known, so that they could have supplied about 70,000 men for 2 months' campaign, sufficient for an army attacking Egypt across the desert.

It will be seen on pl. xiii that the two great granaries on the west each have the lower end of an internal flight of steps inside them. The sides have been mostly denuded away. The appearance of the valley, between these granaries and the main mound, is shown in the bottom view on pl. iii. In that, the men are seen working on the west ridge near the granaries, and the mound is on the left. The section of this valley is given at the base of pl. xiv, where the scale is the same vertical as horizontal, so that the slopes are correct. It is evident that, in order to support the weight of a tall granary, the ground must have been as wide as the upper outline, and the denudation must have been equal on both sides of the valley. Thus there cannot have been more than a shallow hollow between the granary and the main mound. The whole of this denudation has taken place since 400 B.C. See pl. iii, lower view.

18. The western ridge is entirely formed of rubbish thrown out as tip heaps, sloping in various directions. It was in fact the rubbish heap of the city. At the foot of it on the west, two lines of glacis were found; the places of these, one inside of the other, are on pl. xiii, and the position in

section on pl. xiv. The view of the outer one is at the top of pl. xxv, from point 3. These show that this west part was twice fortified with a city wall; also at the tail of the ridge is a vertical scarp of the native clay, and above that a wall of rammed clay retaining the rubbish mounds; the positions of these are marked in the general plan of the Tell, pl. iv. The foot of the outer glacis is about 12 feet above the basal clay, and beneath it is a burnt layer of ashes. It seems probable that these may be contemporary with the burning of the town at 184 feet. If so, the inner glacis would belong to the period of the xxth dynasty or earlier, and the outer glacis to the reign of Amaziah.

On pl. xiii, the buildings west of the granaries are rather older; one corner has been cut away to make room for a granary, yet they are almost on the same level as the granaries. They may therefore be of the xxvth dynasty. The apsidal chamber is peculiar in that age, but paralleled by the apsidal chapels over tombs of the Justinian period at Oxyrhynchos. The view of these walls from the north end is shown along the outer side at the top of pl. xxv, with the side of a granary on the left, at the back.

North of the west granaries there is, on pl. xiii, the plan in outline of a house at the burnt level of 184 ft. On the floor of the north-west room was broken pottery with a piece of a small Cypriote vase, pl. lxii, of the same style as others at that level (lx, 1-5). South of that is a flight of steps at the levels of 186.1, 186.7, 187.2, and 187.9, which are seen in the left edge of the view from point 5. The steps then end at a long space which was doubtless a cupboard under wooden stairs ascending toward the east. South of this again is a small cubical furnace with a long trough flue from it toward the head of the steps (the trough shaded with lines on the plan). A furnace and flue of precisely the same kind also stands just north of the apsidal chamber seen in photograph pl. xxv, 4. The flues had been violently heated, and therefore must have been covered in with moveable tile tops, as there is a regular edge without break. It seems plain that they were for heating bars of metal about three feet long. Such bars could only be needed for swords, and such a flue bed, with charcoal along it, would serve well both for smithy heat and also for tempering. Both furnaces are at the same level.



Having now described the locality and plans, the objects discovered will be dealt with in each class according to the order of the plates.

## CHAPTER IV

### JEWELLERY AND ORNAMENTS.

19. Pl. I. 1. Band of gold 11.14 inches long, 1.6 wide,  $\frac{1}{500}$  thick. The surface is divided into 13 polygons by plain bands across it. A plain band around the edge is marked with four cross lines opposite each of the bands across. Each polygon is intersected by two diagonal lines of minute prick spots; such lines of spots also border the plain cross-bands. The area of each polygon is covered with punched circles  $\frac{1}{25}$  inch wide. Weight 144 grains and 3? loss; equal to the Egyptian qedet. The inner side of the band is quite clean, and there is no trace of fastenings. It does not seem to be possible to attach it for wearing, and the only position for it would be as set on a plaster backing on the forehead of a statue. This form of a front-let—turning up over the ears—is very unusual, if not unique. It appears to have been ripped off in plundering, and torn across, two pieces and a few scraps being afterwards detached. All of these were rolled up together, along with the following pieces, and hidden at HV, at 185 level. About 1180 B.C.

2. Disc of gold foil, 3.2 inches across, weight  $22\frac{1}{2}$  grains, originally 24 grains. This is pierced with the outlines of four lotus flowers and buds, and was the groundwork around a relief group, probably of polished stones. It was torn in scraps from its setting. The surface is covered with small prick spots. Now in the Palestine Museum.

Two pieces of gold foil, covered with punched circles; partly bordered with prick spots which also run in lines across. These have been part of the groundwork between two trefoil objects. 28 grains. Some small pieces with prick spots, which are unconnected, weight  $13\frac{1}{2}$  grains, were also found with the above group.

With these pieces of gold work were placed (xxi, 5) beads of brown agate, onyx, brown and red carnelian, and sard, two copper rings, an iron ring, and a cylinder of paste, with traces of glaze decomposed brown (pl. xx, 27). The uraeus is not of truly Egyptian form; the horns and pole with

pendants, resembles that in Hayes Ward 796, and the horns and ball on xx, 30; the form of the tree between might have been adopted from Egypt.

3. Gold earring with a mark of two cuts on it. Weight 82.0 grains. GV, 186 ft.

4 to 13. Group of earrings; 4 of silver with a knob; 6 of silver with braided edge like xx, 31-2; others of gold, 5, 7, 8, 9, 12, 13 with braided edge, five as fig. 31 and one as fig. 32. Nos. 10, 11, with balls on edge. This group belonged apparently to a jeweller, and was found together at GA 185 ft. With these was a long bead of deep blue glass, with zigzag dragged lines of white glass. The weights of these gold earrings are 82.0, 46.7, 38.1, 44.0, 50.6, 31.9, 31.7, 47.0, 48.0, 46.4 grains.

14. Gold earring, found at JA 177. This is the only gold earring apart from the level of 185-6.

15. Silver ring found at CM 191.

16. Silver earring, flat in imitation of the earlier full form (= xx, 27). AW 200.

17. Silver earring, with bosses, see xx, 48. AZ 202.

18. Seal impression of lion devouring a pig. Below A, 194 level.

19. Bronze knife, see xxiii, 9. J 181 level.

Pl. xv. For the views see sects. 16, 17, and for the figures after, pl. xxxix, sect. 43.

20. Pls. xvii, xix. Scarabs. About 80 scarabs were found, but many without any level, having been merely picked up on the surface or obtained from the people. They are partly photographed and partly drawn, fifteen being thus duplicated. Those with names are, xvii 1 Sebekhetep, 3 Shesha, 20, 21 Tehutmes III, 22 Amenhetep III, 25 Ramessu II; xix 2 Senusert III and Amenemhat III, 19, 20, 21 Tehutmes III, 23, 24 Amenhetep III, 25 Ramessu II jar handle, 26 Ramessu III. Those before the xviii<sup>th</sup> dynasty were all in later levels, re-used. The large one, 18, has lost the face, but was probably of Amenhetep III. The most notable is xvii 12 of carnelian, with a figure of a king seated on a dromedary, shooting at a lion. This is essentially North Arabian in subject. Those retained in Jerusalem were xvii 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 25, 27, 29, 31, 32, 37, 38, 45, 46, 47.

49 is a seal with a figure of a worshipper before an altar, on which is the pair of horns and of pendants as upon the cylinder xix, 27.

50, drawn xix, 29, is a cylinder of lazuli, found at CR 198 just below the fort of the xxv<sup>th</sup> dynasty, and therefore due to the Assyrian invasions of the vii<sup>th</sup> century. It resembles 557 of Hayes

Ward, but the animal is clearly the dugong, afterwards confused with a goat: and the bird-scorpion figure is evidently a god, by the horned cap. The emblem over the dugong is a serpent-headed sceptre (H. W. 557); it appears with animal head and forked end on the Esarhaddon stele (last but one on fig. H. W. 1279), and as a "crook" sceptre on H. W. 546, 548, 936, 940, 1015a, 1311, 1312, 1314, 1315, probably all variants of the same emblem. The scorpion-bird-god is more carefully figured than in any of the examples of H. W. 557, 624, 630, 1297. This cylinder seems to give more exact work than any other, and the clear figure of a dugong explains the confusion of goat and fish united, as the figure of Ea who came up out of the sea. The rhomb in the middle is a frequent emblem, see H. W. 517, 526, 537, 539, 540, 744, 747, 747A, 1027C. It occurs on a bronze lance head, xxiii, 29, thus proved to be Assyrian. This cylinder is in the Palestine Museum.

Pl. xix, 28. This is a rough clay cylinder with three simplified figures. Found under the xxvth dynasty fort, A, at 197.

xix, 30. A haematite cylinder considerably worn, found in the group xxi, 3, at EG 190, of about 930 B.C. The emblem on the pole is distinctly a pair of horns, and not the crescent; it appears in Hayes Ward 1203, and, more of crescent form, in H. W. 1015. Figures carrying the addax by the horns, seem to be offerers in H. W. 858, and 1164, 1202 from Cyprus, and not like Horus grasping oryxes as conquering evil.

xvii, 51-4 see chapter xii on weights.

21. xvii, 55-79 and xviii. Fibulae. The whole of these fibulae are of an entirely different class from the European type; the spring of the pin is inserted in a socket, instead of being made in one with the bow. This socket form is general in Palestine and North Syria. The last two here are of a third class, with the pin hingeing on a rivet, so that it could be turned out sideways for insertion in the garment, and the bow then swung round to catch.

Various styles are shown here, and the order of the plate being according to the level of the earliest examples, the styles are seen to be largely contemporary, as they overlap. The distinctions are

(A) cut in the solid with high relief, no. 1, about 1150 B.C.

(B) cut in the solid, varied rings, no. 2 (also 4, 6, 7, 10, 14, 16, 18, 19), beginning 850 B.C.

(C) plain, sharp knee, no. 3 (also 5, 12, 13, 21, 22, 26, 27, 28), begin 800 B.C.

(D) with coiled wire ornament, no. 11 (also 15, 23, 24), begin 800 B.C.

(E) with chased coil, no. 8 (also 9, 17, 20, 25), begin 750 B.C.

(F) semicircular bow, 29, 30, begin 500 B.C.

(G) rivet-hinge, 31, 32, begin 600 B.C.

The chased coil, E, merges into a plain cylinder, ready for chasing, but not finished. The date of the earliest example agrees with Dussaud's placing the earliest fibula to the close of the Mykenaeen age (*Civ. Préhell.* 54). Fibulae were certainly made at Gerar, as several straight castings, not yet bent into shape, were found here. There were also many detached pins, with the shank for insertion in the fibula, which were probably not yet put in place. The catch was made to imitate a hand holding the pin, as the fingers are marked on the earliest example (1), and on several later ones such as 14 and 16.

In the photographs, pl. xvii, the fibulae are in rows according to the classes A to G, F and G being together on the last line. No. 32 is drawn on pl. xviii as restored to shape.

22. Pl. xx. Seals. 1. Blue paste conical seal, with degraded design of uncertain origin, from KB 176.

2. Clay impression; HV 185.

3. Schist, glaze gone brown; GP 187.

4. Blue glass, gone white; domed back. Ga 187.

5. Grey limestone, GU 187. Palestine Museum.

6. Basalt, conoid back. HV 187: the subject is somewhat worn, and difficult to interpret.

7. Grey serpentine, bird over an animal? Em 188.

8. Fragment, GN 188.

9. Red limestone, subject? drilled hole class. EF 189.

10. Brown limestone, drilled holes. FF 190.

11. White limestone stamp, goat and  $\Delta T$  in usual signary. EJ 190.

12. Translucent yellow steatite, much worn, subject indistinct. FJ 192.

13. Chalcedony, duck with head on back, roughly cut, usual type, under A 194.

14. Clay impression; two goats and tree: low in west of W spur.

15. Clay impression, ibis; BZ 198.

16. Clay impression, Anhur from scarab; BZ 198.

17. Ivory, winged figure running (?); back, of fist form (see *Buttons*, 281). The work of this suggests

Persian rather than Mesopotamian style. BL 198. Palestine Museum.

18. Blue glass. BL 200.
19. Buff limestone, drilled holes. 201.
20. Calcite, worn; panther? BS 202.
21. Quartz crystal, broken: two bulls reversed. 205.
22. Clay impress, solpuga? no level.
23. Yellow glass of style of 3rd century A.D. Pallas crowned by Victory. From a grain pit of mediaeval date.
24. Pottery stamp, rudely incised, *Rannut ka neb*, "Rannut give all food." EU 189.
- 25, 26. Bronze plates with loop for suspension. GN 182.
- 27, 28. Braided pattern on undersides of gold earrings, pl. 1.
- 29-39. See group 1, pl. xxi. 35, 37. Faience.
36. Faience decayed.
40. Silver earring, FH 188.
41. Silver earring, EF 188.
42. Silver earring, under EO 191, under ER 189 (=GP).
43. Silver earring, EK 190.
44. Silver earring, under A 190.
45. From stone mould for earring, AFF 193 (xliii, 4).
46. Silver earring, trench at north-west, below 194. [47, 48. See pl. i.]
49. Copper ring coiled, JB 174.
50. Sheet copper ring, JB 174, GA 184.
51. Copper ring, KA 181.
52. Bronze ring, GJ 185.
53. Bronze ring, EM 191.
54. Bronze ring, EL 193.
55. Bronze ring, DJ 193.
56. Bronze coil, under A 194.
57. Bronze loop, DU 194.
58. Bronze ring, CK 194.
59. Bronze strip for making finger ring; under south wall DZ 195.
60. Bronze earring, EL 195.
- 61-2. Bronze coils, AL 202, AJ 199.
63. Bronze ring, BM.
64. Bronze ring, pierced bezel 190. Arabic? from a burial.
23. Pl. xxi. Groups of beads, found in broken pots buried in the floors. Such seems to have been the usual way of hiding ornaments.
  1. HV 186. Inner string, carnelian. Outer, carnelian with barrel beads of bone with lines on the

end (see xxii), beads of bird's bone stained green, a long blue paste bead. Loose beads and amulets see xx, 29 to 39. Small copper ball beads threaded with three white discs between. An inch length of iron wire with three cylinders of bone alternate with two of wood(?).  $\frac{1}{4}$  inch diam. About 1140 B.C.

2. EN 190. Inner string, barrel and cylinder sard, with carnelian balls, quartz ends. Outer, girdle of double tube carnelian with small ring beads and pointed pendants (see xxii). In the middle, pierced dome of ivory, cylinder of blue glass gone white, hand amulet of dark blue glass between balls of decomposed glass and glaze. Also cowroid of blue paste, traces of signs; small thin barrel of blue glass, two brown quartz, large barrel of black steatite. About 930 B.C.

3. Eb 191. Inner string sard barrel beads. Next, brown quartz beads with large and lesser rock crystal beads; this brown quartz is translucent and cloudy like carnelian. Outside, carnelian ball beads. In the middle, ivory Hathor; with it were two others of more Egyptian work, see below, 3A, now in Palestine Museum. A dozen blue glazed aegides of Bastet of regular Egyptian work of xxiiind dynasty. Two uzat eyes. Several ivory spacer beads for three and for four strings. Haematite cylinder, see pl. xix, 30. Disc of cone shell. Also many small barrel beads of red glass changed green; nine large double tube carnelian, like the previous girdle, but all chipped and broken. Large blue glass balls, and black jasper. Many little glazed beads, various. Plano-convex of clear white glass for setting, 0.6 diam. Many fragments of silver or lead corroded. About 930 B.C.

4. EM 191. Inner string, large quartz crystal bead, large brown and white agate barrel bead, and carnelian and crystal beads. Next string of carnelian balls and pendants. String of brown quartz beads, with agate barrel. Outside, a girdle of cowry shells. Two uzat eyes. Also large beads of decomposed glass, and small steatite spindle whorl. About 900 B.C.

5. HV 185. Barrel beads of brown agate, and brown and white onyx. Smaller ones of brown quartz, carnelian and sard. Cylinder xix, 27. Three iron rings. Found with gold frontlet (pl. i, 1). About 1180 B.C.

6. DH 194. Strings of carnelian and brown quartz. Girdle of cowry and other shells. In the middle, ivory figure of Hathor, and scarab with cross and diagonals, in silver setting. About 850 B.C.

24. Pl. xxii. The types of stone and glass beads are here arranged for comparison. Each line is of a single period, and the forms are classed from the longest to the shortest. The single beads found at recorded levels are grouped between the lines of the whole necklaces. Thus all between 180 to 185 feet come first, then the string of FL 185, the string of FZ 186, then all between 186 to 190, and so forth. On ranging the eye up and down, the history of any particular form can be traced. The dates assigned to the strings of beads are stated with regard to the nearest wall levels as defining the period, not merely according to the general average. Spotted glass beads, at the right hand, just survived from the xviiiith dynasty till about 1250 B.C. Then none appear until the so-called Cumaean revival of glass work about 850 B.C. with a blue glass body, and white spots with blue centres.

The large one-colour glass beads begin at blue EW 190, black Ef 189 or about 1000 B.C.; dirty brown glass 960 B.C.; opalescent glass at 192 ft. or 900 B.C.; amber glass (fragment) at 195 ft., 800 B.C.; deep blue at 198-200, or 650 B.C., also lemon yellow glass. Hitherto this class has been very uncertain in date. The sharp-edged stone bead begins as a disc (last in FL 185), which is made thicker in FZ 186, again in Eb 190, thicker and flat at axis in 191-3, more so in DH 194, 198-200. Here is a regular progression in a distinctive type, from 1180 to 600 B.C. The lentoid disc is rare and unchanged, of brown carnelian about 960 to black limestone about 800 B.C. The faceted carnelian is only found late, at 200 and 205 ft., or 600-450 B.C. The tubular and barrel beads only show slight and irregular variations.

## CHAPTER V

### BRONZE WORK.

25. Pl. xxiii. The left side of this plate contains tools, the right side weapons.

1. The earliest figure may be of copper, as it was at 168 level, or about 2000 B.C. It seems to be a borer, by the square section to act as a rimer.

2. A beak-shaped chisel of good form is also early, at 170 level.

3 to 5. Chisels of usual form are from the 177 level, 1480 B.C.

6. An irregular piece of sheet bronze, use unknown.

7. Cutting-out knife of the form used early in the reign of Tehutmes III (*Tools and Weapons*, lxii, 18).

8. Cutting-out knife of a form usually before the xviiiith dynasty: but this type with a recurved end survived till Tehutmes III (GARSTANG, *Arabah*, xvi, E 10).

9. Knife with handle in form of a horse's leg, a well-known type in this age (T.W. xxvi, 145; xxix, 231-2). See i, 19. J, 181.

10, 11. Short chisels for heavy blows, 178 and 180 level.

12. Chisel from 181, about Amenhetep III.

13. Large double-edged knife, varying from the xviiiith dynasty form by having a narrow tang instead of a flat handle.

14. Socketted chisel, 184 level, 1200 B.C. This is the earliest socketted form, the Italian not appearing till about 800 B.C.

15. Fragment of bronze chain, unusual before Greek times, but known in iind dynasty.

16. Lead net-sinker, very common at Gurob in this period.

17. Fragment of notched bronze wheel, bent over on inner edge. Found under level of xxvi dynasty, AM 196.

18. Unknown object, broken at top end.

19 (at top), 20. Wide chisels for working wood. DA 196.

21. Borer, to fit a handle.

22. Thin cutting blade: under B 196.

23. Chisel, level unknown.

24. Flaying knife, of the usual Egyptian form.

25. Upper half of bronze axe, ACC 195, about 800 B.C.

26. No. 26. Lance head of late Hyksos age, JB 172.

27. Lance head of Tehutmes period.

28. Thin blade, knife?

29. Assyrian lance head, marked with the rhomb, a frequent sign on the cylinders. This is of the age of Sheshenq, one of the eastern importations of that king.

30. Arrow head, ES 191, 920 B.C.

31. Spear head, EK 190, 1000 B.C.

32. Piece of spear head, in wall based at 198, 650 B.C.

33. Piece of spear head, EC 194, 830 B.C. The wide socket and shallow wings are most like the Egyptian form.

34-45. Nails and rivets of various sizes; only 34, 35 are before 780 B.C.

27. Pl. xxiv. 1 to 3. Toggle pins of about 700 to 550 B.C. The form is found in Egypt in the xviiiith dynasty.

4 to 10. Kohl-sticks for placing kohl on the eyes, from about 800 to 450 B.C. The form with flattened end, 4, 5, is not Egyptian. The knob (8) or squaring in the middle (9) is Roman in Egypt.

11 to 36. Small hooks with a point at the other end. These range from the xxth to the xxvith dynasty. Some of the earlier ones, 13, 15, 16, 17, have the head set slightly backward. There is no trace of the point having been put into a handle. They seem intended for making a kind of network by knotting, the hook to put the thread through a loop, the point for loosening and regulating the knot.

37 to 39. Bodkins with the eye made by looping the end; the larger are the earlier, from KB 176, or 1500 B.C., to the lesser at FH 189, or 1050 B.C.

40 to 51. Bodkins with punched eye, from Et 190, or 1000 B.C., to 201 at 600 B.C.

52 to 54. Pins with turn-over loop; 52 and 53 of iron at HF 185, 1200 B.C. 54 is of bronze, 600 B.C.

55. Needles, level unknown.

28. 56. Pin with sunflower head, from BF 200, 630 B.C.

57. Dipper for taking wine from a deep vase, a purely Greek form. AL 196, early xxvith dynasty.

58 to 61. Bronze weights; JR 178, 1450 B.C.; HV 186, 1150 B.C.; in N trench at 188, 1100 B.C.; at El 189, 1050 B.C.

62. Heavy knob of bronze from a staff. JR 180, 1350 B.C.

63. Fish hook, GN 185, 1200 B.C.

64. Pendant, HV 188, 1100 B.C.

65. Handle with rivets, from a vase, HV 187.

66. Square bar, tapering; perhaps a rymer. CV 194, 850 B.C.

67. Bronze bolt of regular Egyptian form. CK 194.

68. Bronze handle for a vase. 195 level.

69. Sheet bronze bent and rivetted. B 195.

70-1. Wire loops.

72. Sheet bronze punched for a rasp, ACC 196; BS 200. 750 to 650 B.C.

73. Ornament formed of two strips of bronze crossing, and each end turned up and curled. BM 197, 700 B.C.

74. Belt fastener, BN 200.

75. Unknown object, BC 200.

76 to 80. Bangles, from EC 194, to AZ 200. 850 to 650 B.C.

## CHAPTER VI

### IRON WORK.

29. Pl. xxv. On pl. vii is marked an iron furnace close to station F, and on pl. ix are three furnaces in that region, two intermediate between xxth and xxiind dynasties and one of the xxiind. The nearest levels of wall foundations, and the floors of the furnaces stand thus

Walls	Furnaces	Dates
184.7-185.4		1194 B.C.
	185.6	1175
	187.5	1100
189.8-190.5		932
	192.0	870

The furnace dates are proportionate between those of the floor levels. The plans of the furnaces are placed at the bottom of pl. vi. The earliest is the largest and best preserved, with the draught hole complete, here placed in elevation at the end of the furnace. All the furnaces have recesses at the sides (see xxv, 6), sloping wider upward, to allow of a draught without being so much encumbered with the charge. The openings all faced west to catch the wind. Probably the top was arched over between the recesses, to retain the heat. The earliest of these is almost as old as any dated iron known in the Mediterranean, excepting the knives here of 1300 and 1250 B.C. It proves that the smelting was done on the spot, and that the metal was not imported. The curved channel in front of the furnace at 192.0 may be merely due to accidental shifting of the bricks.

All of the earlier examples of iron are here dated with reference to the nearest buildings both above and below.

30. Pl. xxvi. The large iron tools, see pl. lxvi. These were found below the next chamber, north-west of the group of furnaces, Ek 186. The chamber ground level was 189.8, but the tools were at 186, and therefore belonged to the same intermediate position as the furnaces. The largest mass was the pick, no. 1, side and top view. This was entirely oxidized all through, like the smaller tools. It weighs now  $9\frac{1}{2}$  pounds, as hydrated oxide, equal to 6 pounds of metallic iron. The original volume thus showed that  $\frac{1}{3}$  of an inch all over must be deducted to allow for the expansion of rusting and the cracks caused, and this correction has been made in drawing the original form here. The true

shape of the ends was uncertain; but the haft hole being centred to one side of the tip shows that the ends were chisel-shaped, as dotted.

2. Plough sock, with square socket for the wood: apparently made by hammering out a flat sheet and turning it up round a mandril, the middle part being subsequently welded up solid. Two were found together, one now at Jerusalem. Ek 186.

3. Hoe, side and top view. This angle between the blade and handle is also seen often from Pompeii, at Mainz and Newstead. It implies that the worker stood upright, holding a long handle slanting down, and let the hoe fall vertically on the ground. Two were found, one now at Jerusalem. Ek 186.

4. A smaller hoe, GE 185, is earlier, found on the floor of 1194 B.C.; the socket is broken away.

5, 6. Hoes; EE 190, floor of 932 B.C. FB 188, about 1000 B.C. FL 186 about 1100 B.C.

7. Hoe with broken socket, mended by a lap which must have been welded to keep in place.

8. Adze, found with the great tools, Ek 186. It is rather earlier in type than a bronze adze of XXI<sup>st</sup> dynasty from Gerzeh, Egypt.

31. Pl. xxvii. Sickles. 1 may be the shoeing of a wooden spade, as such a form is found in Babylonia, and of Norman date in England; but it might be a portion of a disc on a threshing roller like those now in Egypt, though such would be unlikely so early. CBB 195.

2. Hook, probably for agricultural use, the top is too rounded for a harpoon.

3. Curved piece, apparently unbroken; the use is unknown. It is one of the earliest examples of iron, coming from HL 181, or more than a century below the building level of 1194 B.C.

4. Nail from below A 193 level; also 4a, a longer nail from AW 199.

5. Nail clenched round: to bend so sharply close to the head suggests that it was turned by a stone below, and the thick bend shows great ductility. AW 200.

6. Harpoon, from a wooden handle. DK 192, 850? B.C.

7. Pruning hook, heavy at the end for a blow; most like the bronze forms of Italy. CL 194.

8 to 20. Sickles, mostly of a uniform degree of bend, the straightest no. 18, the most curved no. 20. The attachment to the handle seems but slight in most forms, which points to their being used with a sawing motion, and not to cut through a handful of stalks with a single drag. Only two of the handles

were rivetted, 14, 15. Similarly, most of the early European sickles must have acted more like a scythe than a bill-hook. The Gerar forms are much shorter and less curved than either the Egyptian or European forms. They are most like the copper sickles from Nineveh and Anau (*T. W.* lvi 11, liv 14). The dates run from GA 184, 1250? B.C. to BU 200, 600 B.C.

32. Pl. xxviii. Spear heads and daggers. 1 with mid rib and slight tang; GP 186, 1200 B.C.

2. Spear head with tubular socket; HP 188, 1100 B.C.

3. Heavy spear head with solid shaft; HL 184, 1200 B.C.

4. Spear head with slight tang; EO 190, 930 B.C.

5. Light spear head, with long tang; EI 192, 960 B.C.

6 to 12. Daggers, some of which have been used as knives; see the wear on one side of 7, 8, 9, 10. The tangs are too slight, and the blades too wide for spear heads. The probable dates are, 6, 1350 B.C.; 7, 1150 B.C.; 8, 1100 B.C.; 9 not levelled; 10, 1000 B.C.; 11 and 12, 900 B.C.

13 to 20. The heavy square heads belong to large arrows or bolts, used for piercing armour. On each is placed a section which shows the form. They range from 193 to 200 or 900 to 600 B.C.

Pl. xxix. Arrow- and lance-heads. The peculiar form with a tang at the side, nos. 2, 3, 5, 9, 10, 20, belongs to Central Asia, as at Tomsk, Perm, and the Caspian; and a modification with a more projecting tang is found in Bavaria, Switzerland, and Greece. It begins at ED 190, the floor of Sheshenq. Another introduction of the same date is the triangular arrowhead (12 to 21), beginning at FF 190. This is specially Asiatic, found at Minussinsk, Altai, Perm, Siberia, S. W. of Caspian, Sweden, Hungary, Hallstatt and Mykenae. In both types, the diffusion is greater in Asia than in Europe, and, looking at the drift of peoples westward, we cannot but call these Asiatic types. A distinctive form 6, 7 has the wings square or dipping at the base. Such are found in Upper Bavaria, and on triangular heads in Perm, Altai, and Minussinsk, so this again is probably Asiatic. The very narrow form of socketted arrow head, 11, is only equalled at Minussinsk. The triangular form, three-edged, begins with blades down to the base, and a short tube for the reed (12). Later, the blades are cut off before the base, and a longer tube is made (14); this is copied in iron with a tang instead of a tube (13). The narrowest

type (15) is found at all levels from 190 to 201 (930 to 600), so it was not a fashion, but made for a special purpose, probably for piercing loose linen dress. The type with very wide blades (12) was for cutting flesh, where little friction was met. That with solid triangular head (21) would, by its extra weight and small surface, be fit for piercing leather armour.

The lance heads are much scarcer than arrow heads in most localities, but at Gerar they are the more usual. They are all of iron, except the Assyrian type xxiii, 29. The earliest is of KC 183, about 1250 B.C. The general shape widens later, as 29, 33, 38, 57. Some smaller and narrower forms appear at 192 to 195, or 900 to 800 B.C. The most surprising form is the very wide one 85, which by the slender tang is rather a large arrow head. Wide forms, such as this, have been found in Egypt (*T. W.* xlii, 193-4), and are similar in size to blades from the Caucasus and Hungary, and also from Japan. As this appears in the xxvth dynasty, it would accord well with a Scythian origin. The principal use of the fort here must have been to hold back the Scythians who were in occupation of Askelon, and threatening Egypt, so it is likely that Asiatic types should be scattered here during the frontier skirmishes. The purpose of such very wide blades would be to attack horses, and bring them down by loss of blood. The barbed form 69 has its nearest parallel in one from Olympia, and is somewhat like other western forms; it was probably brought by Greeks, as its date would be about 450 B.C.

33. Pls. xxx, xxxi. Knives. Here again we meet one of the earliest pieces of iron, in the rivetted knife, 1, of KA 181 or about 1300 B.C. The other early examples are no. 2, 1250 B.C.; 3, 4, 1200; 5, 6, 7, 1150; 8, 9, 10, 1050; 11, 12, 950 B.C. There was much variety of form for various purposes. Owing to being entirely rusted through, and bedded in hard mud, most of them have been broken, and some parts were not recovered. The absence of tangs or handles is therefore probably accidental, as they were lost before or after burial. The peculiar pointed type, 4, is that of the northern *scramasax*. The curious little leaf-shaped knife, 7, seems to be without parallel. 20 is unusual in thinness and large curve. 29 has three bands of copper just above the tang, the only ornamented example. The flamboyant form 41, of about 750 B.C., is due to the Italic influence which brought in the Cumaean

glass. The curved knives 60, 61, of the xxvth dynasty like those from Adelsberg and Idria, are doubtless Norican steel imported.

Pl. xxxii. Tools. 1 to 3 may be rings for wearing. 6 is a finger ring of about 800 B.C.

The hooks, 7, 8, are for tackle. 10 is like a meat hook.

11 to 21 are borers and rimers from about 1150 to 700 B.C.

22. There are examples of this long borer-scoop, at FL 190 and BZ 201, or 950 and 650 B.C. It was probably for ship-building, where large timbers had to be connected.

23. Wide chisel for wood.

24. Stone-mason's chisel.

25. Small socketted chisel.

26. Large gouge.

27. Mason's chisel, CV 194; others FJ 190, BU 201.

28. Mason's wide chisel.

29, 30. Small chisels.

31. Gouge? the turn at the end is unexplained.

32. Stone chisel for flaking.

33. Socketted chisel.

34, 35. Plain chisels.

36. Long bar with ring at end, poker?

## CHAPTER VII

### BONE AND IVORY WORK.

34. Pl. xxxiii. 1 to 25. The bone and ivory rods usually have zigzag line patterns. They are of three classes; (A) long rods with pattern at the ends, as 6 and 16, or rougher ones plain; (B) rods ending in hands, 8 and 10; (C) toggles for dress fastening with a hole near one end, 2, 6, 9, 11, 12, 17, 21. They are of all periods from 1200 to 600 B.C.

26. Lentoid ivory, with wheel pattern on top.

27. Unknown ivory.

28. Hathor figure F1 192, like those with necklaces Eb 190, pl. xxi, 3, 3A.

29. Bone for one side-piece of a sword handle; the two pieces were probably bound by metal bands.

30-35. Bone arrow points, varying from KB 177, 1450 B.C. to CW 195, 750 B.C. This range of time, and yet their scarcity, suggests that they were brought in by distant people, perhaps during

raids of Amalekites or Midianites who had not a supply of metal.

35. No. 36. Disc of cone shell.
  37. Disc of ivory, grooved round edge.
  38. Portion of bone furniture.
  39. Lentoid of blue-green paste with twelve branches.
  40. Natural piece of bone structure, source unknown.
  41. Concave shell with 7 blackened pits and one hole in centre, and 3 suspension holes.
  42. Small tablet with six circles.
  43. Piece of bone edging, with circles.
  44. Head of serpent? with three circles.
  45. Piece of bone furniture of casket.
  46. Ivory toggle, well finished.
  - 47, 48. Bone rings.
  49. Bone tool.
  50. Pointed slip of bone, pierced with slot.
- Pl. xxxiv. 1, 2. Shells, pierced.
3. Flat strip of bone, unfinished.
  4. Disc of shoulder blade (see section) decorated with circles: purpose unknown.
- 5 to 34. Pointed pieces of rib bones, from 1200 to 500 B.C. Such bone implements are found commonly of the ninth dynasty at Gurob, and are considered to be mesh gauges for making fishing nets.

## CHAPTER VIII

### POTTERY FIGURES.

36. Pl. xxxv. Many of these figures were picked up from the surface of the mound, having been exposed by weathering like the layer of sherds which covered the ground: hence several are without level or date, and are not described but only inserted in position in the plates, in agreement with the style of other examples. In each class—Female figures, Male figures, Oxen, other Animals, and Chariots—the figures are placed in the order of level, the oldest first.

The most frequent class is that of figures of Ashtoreth, the Queen of Heaven, who was worshipped both by Canaanites and Jews. These were made from 1700 to 600 B.C.

1, 2, are the same; 2 is from JB 174, which would probably be about 1700 B.C.

3 is undated, of Egyptian style, xviiith or early xviiiith dynasty.

4, 5, are alike in the rough work and separation of the legs, JF 175 and JB 177, about 1650 and 1500 B.C.

6 is from W 181. 7 from GB 186 of about 1150, the beginning of the usual type.

9 has four radiating lines on the forehead, and a throat pendant, mould recut (as one before and after it), FP 186, 1100 B.C.

14 is a pot figure with head inserted (as all those from 6 onward); arms are added holding a disc. This seems to represent the Queen of Heaven holding a cake offered to her; that it is not a worshipper offering is seen by the head being exactly like all those of the goddess in the same period. The date of this and two following heads is not known, but it cannot be far from 1050 B.C.

17 has a full wig of long Egyptian form, FL 188, which must belong to about 1000 B.C.

18 a fragment, EY 188, is probably an earlier copy of the same mould as 27, FO 191, dated as 1000 and 900 B.C.

20 is the largest piece of one of the pot figures, made on the wheel, with legs, arms, and a moulded head added to it. EM 190, 930 B.C.

21. A figure holding the breasts; the head (a later copy recut of FP 186), is of CP 190, about 850 B.C.

23. A new type of head DR 190 is repeated in 39, DH 193, about 900 and 800 B.C.

Pl. xxxvi. 34 to 36 begin a new type of moulded figures in one piece, of clumsy, thick style. 35 has a peg projecting at the back, for attachment to a wall. The dating of 36 is DR 192, 850 B.C. They seem to mark the Edomites' hold on the district, which was later crushed by Amaziah.

47-49 show strong Greek influence, the first of BO 196, about 700 B.C.

50 is of the purely Syrian style like the stele figures; it was found high up on the west side of the west ridge, but undated.

37. Pl. xxxvi. 1-20. Male figures. These are very various, but cannot be identified with any particular god, and their purpose is unknown.

1. The earliest, GO 177, is of about 1500 B.C.

2 is like the offering figures of Babylonia, HO 183, about 1200 B.C.

3 is a pot figure, painted red, with white eyes, which differs in style from all the others; HL 183, about 1200 B.C.

4 has a strange head-dress, and peculiar style; GK 185, about 1200 B.C.



6 is a mould, of which the impress is below; GC 189, 1000 B.C.

7 is a "snow-man" figure, such as belongs to the Delta, undated.

8 is the torso of a horseman; FJ 190, 930 B.C.

9 leg of a doll; EF 190, 1000 B.C.

10 head, EN 191.

11 head DR 192.

12, 13, very clumsy figures of new style, CL 192 and CW 193, both about 800 B.C. of Jewish influence?

14 another "snow-man" figure; in a wall at 192, 950 B.C.?

15 is from an earlier form of the same mould as 18, at 194 and 200, or 850 and 650 B.C.

16 differs from all other figures in style, AZ 195, 700 B.C.?

19 is a mould.

38. Pl. xxxvii. The ox is the most usual animal figure, from GS 183, 1250 B.C., to BZ 200, 600 B.C. The greater part of these figures are humped oxen, found at FL 185, and upwards to 196; that these are oxen is proved by many of them having horns. The humped ox of India extends to Mesopotamia but not farther west. Of these figures, FL 185 and 187 are from a rubbish ground which may have been filled rather later than the usual level; EW 188 is at the foundation level of Sheshenq; so none of the figures certainly precede the Mesopotamian influence of his time, while six belong to 190-191 of his age, and six to the 196 level of the Assyrian invasions. They are thus connected with the periods of eastern influence.

Pl. xxxviii. Many animal figures are too indeterminate to be identified. 1, 2 are lions. 3-7 dogs. 8-14 horses. The red polished ware of no. 22 is peculiar. None of these figures are before 181, or 1300 B.C., so they are not of importance regarding the introduction of animals, as the horse was known some centuries before that.

Pl. xxxix. 1, ram's head; 2, 3, 4, sheep; 5, back of a fat-tailed sheep. 6, ram? 7, pig. 8, ichneumon? 9, tortoise. 10-11, birds.

39. 12-14 model chariots with figures. 15-18 wheels of chariots. Precisely the same form of chariot, and both forms of wheel, are found in Assyria, and also much further east at Anau in Turkestan (PUMPELLY, *Explorations*, 1904, pl. 41. 21; pl. 47, 9. 10. 11). As such forms are peculiar and entirely artificial, they are not liable to arise independently, like forms which are copied from

nature. The date of these figures, and others of animals, is placed before 2000 B.C. at Anau by Pumpelly, or before 1000 B.C. by Schmidt. As the Gerar chariots are later, being found at FJ 188 the foundation level of Sheshenq, they also mark the Mesopotamian or Central Asian influence of his time. It has been suggested to me that the purpose of the notched wheel was to reach through a top layer of loose sand to firmer ground below, and so save the labour wasted in displacing the loose sand by a smooth wheel. This certainly seems the only explanation of so strange a form.

19 is a portion of a horse figure, with hole for a wheel, doubtless to go with the chariot.

20 is a model jug, 21 a model bell.

22 is part of a game board of a widely diffused form. In *Sedment I*, pl. xxii, I have given sketches of this kind of board from Thebes, Sedment, Kahun, Cairo Museum, Gezer and Susa. The Sedment and Kahun examples belong to the xth and xiith dynasties. The Gerar piece is from JF 179, and therefore late xviiiith dynasty.

23, a neck of a vase, with the edge pinched up to leave a narrow mouth, and knobs added for eyes of an animal's head.

24, 25. Many discs such as these are found, of Jewish and Greek times. Children now spin such discs as toys by means of two stretched strings passing through the holes.

On pl. xv are other pottery figures. 3 is part of a rhyton of black ware with ears and legs of an animal; from W 183. 4 is the body of an animal, painted red with white stripes, Ef 187. 5 is a rhyton of rough pottery with bull's head and legs, B 197. 6 is the cupid figure from a rhyton, BL 199. 7 is the upper end of a pot figure, shewing the stump of the moulded head projecting inside.

## CHAPTER IX

### STONE WORK.

40. Pl. xv. 8. Part of a limestone Cypriote figure, found in the south wall of BM, about 199, 700 B.C.

9-12. Bust of a limestone figure of Ammon, perhaps here the Phoenician Baal Hammon: about viith cent. Found on the surface.

Pl. xl. The upper four subjects are the scratched designs on the sides of a cuboid altar of limestone, like xlii, 6. The range of these altars begins about

700 B.C. at BW 197, or possibly earlier at BM 196; it centres about 670 B.C., and declines at 500 B.C., AG 201, or perhaps rather later at 203. As such altars are well known in Assyria, it is plain that they were introduced in the Assyrian invasions of Israel from 750 B.C. onward, reaching through to Egypt by 711, and culminating in the attacks on Egypt in 675 to 669. After this, the use of such incense altars continued into the xxvth dynasty. The earliest are carefully engraved with geometric designs (12, 18, 19). After the figure designs, the geometric in very rough form (9, 16) end the series.

1-4. The subjects are palm trees either side of a tank, humped animals (camels not oxen), and a mythical beast with bird head. The borders are rough spirals degraded from guilloche pattern. AM 199, 550 B.C.

5-8. Sides of a cuboid altar of limestone with pairs of oryx and of ibex. From under west wall of BH 197? 670 B.C. Remains of geometrical pattern along top.

Pl. xli. 9. Latest fragment from 203. Rude end of geometrical style.

10. The most elaborate figures, of men, dogs, and birds: guilloche scarcely degraded.

11. Geometrical pattern on four sides alike; BO 198, 660 B.C.

See part of a similar altar from Tell Retabeh (*Hyksos and Israelite Cities*, xxxvi C).

12. Geometrical pattern; under west wall of AM 195, 700 B.C.

13. Coarse geometrical lines; W 181, date?

14. Geometrical lines and circles; BM 199, 600 B.C.

15. Very rude animal figure?

16. Coarse geometrical pattern, degraded; AG 201, 500 B.C.

17. Slight pattern, no date.

18. Star of parallel lines, on leg of an altar; BM 196, under east wall, 750 B.C.

19. Hatched diagonal lines, on leg of an altar; BW 197, also A 196, 700 B.C.

41. Pl. xlii. 1. Slab of sandstone with 14, 14, and 12 + x tally marks, probably of days. The date of this is about 800 B.C. It is of value as showing that the week was then of 7 days regardless of the lunation, as a lunar week would require one or two 8 day weeks in the month.

2. Trachyte lamp bowl, smoked by the wick. Bull's head in relief. CT 196, 730 B.C.

3, 4. Moulds of limestone for casting earrings.

5, 6. Limestone altars, copied as 11 and 16 on pl. xli.

7. Game board scratched on sandstone slab. Similar boards are cut on the steps of the Parthenon. The game is now played by A and B each having 9 beans. A places one at any intersection. B places one to hinder A from getting 3 in a line. If A or B get 3 in line, he removes one of the adversary's beans. The move is one at a time, alternately. The holder of the largest number at the end, wins.

8. Small board of the Egyptian  $3 \times 10$  game.

9, 11. Two trachyte foot scrubbers.

10. Hard limestone saucer, turned and of thick body: several were found with various numbers of spots, or none, around.

12. Two large pebbles, with bored holes. A great number of such, of various sizes, about  $\frac{1}{2}$  pound to 10 pounds, were probably used for weights on ropes to hold down tent covers.

13, 14, 15, a late Roman water jar (red), early Arab found on mound (black), modern jar made at Gaza (black), showing the continuity of form for 1600 years.

42. Pl. xliii. 1. Carnelian seal with two lines of Phoenician writing. This is like the usual Hebrew seals, but the first word is not Hebrew. It reads **DRYMSH, ALYQM**. The latter is probably Eliakim. CJ 191, 800 B.C.

2. On shoulder of a jar above the handle L RYLK "for Rilek." The *yod* is not of a usual form, but the sign can hardly be read otherwise. GS 186, 1100 B.C.

3. Three letters, NB?Y, the middle sign may be B in a north Syrian alphabet; possibly the name Nebai of Nehemiah 10, 19. Found loose, at the foot of the west slope.

4. Unknown signs, below A 195.

5. Monogram KA scratched on the red base of a black Greek vase, below A 195.

6. M on a vase base, below A 196.

7 to 38, various marks on pottery, of which 7 may be *mim*, 8 *tzaddi*, 10 the pentagram.

43. Pl. xliv. 1 and 2, probably whetstones. 3, perhaps a wrist guard for an archer.

4, 5, 6, may be amulets.

7 is a large drill cap of white limestone.

9 to 17, rounded spindle whorls, from 166 to 203 level, or before 2000 to 500 B.C.

18 to 28, discoid spindle whorls, from 173 to 201 level.

29 to 36, domed spindle whorls of black steatite, from 194 to 203 level.

37 to 45, conoid spindle whorls, from 174 to 200 level.

46 to 48, ornamented discs of limestone, possibly spindle whorls.

49. Green glass ring with sharp edge.

50. Gypsum ring.

51. Flint axe partly ground, from GL 186, 1200 B.C.

Pl. xlv. Stone vessels. 1. Trachyte cup. 2. Deep cup of trachyte. 3. Trachyte lamp, see pl. xlii. These vessels are from 194 and 196 level, or about 820 to 750 B.C. following on the connections with the north by Israel and Syria. 4, a purely Egyptian pilgrim bottle of alabaster.

5, 6, the earliest forms of the bowl of Cypriote origin with the wish-bone handle. At 166, about 2400 B.C., the handle hardly rises above the brim. At 177-8, about 1500 B.C., the handle is curved outward, and rises high. These are in a polished grey ware, without any decoration. 7, a peculiar lid, broken above. 8, 9, jasper and carnelian pendants of regular form of xviiiith dynasty: found at 175 and 181 level, or about 1600 and 1350 B.C. 10, hard limestone pendant, about 1100 B.C.

11. Rock crystal disc cut for mounting, about 1100 B.C.

12. Stopper of gypsum, 13 of alabaster.

14. Flat slab of carnelian.

44. 15 to 67, Egyptian glazed ware, all of faded blue or blue-green, unless otherwise named. The thin disc bead, 15, is known in the xviiiith dynasty, but is earlier here, at about 1600 and also before 2000 B.C.

16 is a blue glass head for a pin.

17, a blue paste draughtsman.

18 to 22 are usual objects, needing no explanation.

23, a pottery stopper for a narrow-necked vase, with a hole in the top for a string, coming out at one side for the knot. 191 level or 930 B.C.

24 is a pottery leg of a doll, of about the same age.

26 is the base of a statuette of a king whose feet are planted on the heads of two enemies; they are supposed to be bound closely, and their legs appear on each side.

34 is a corner of an uzat eye.

39 is a rosette button, about 850 B.C.

41 is a ring bezel with Bes.

58, 60. This ugly form of uzat eye, with raised brown ridge, is here about 650-600 B.C.

## CHAPTER X

### POTTERY.

45. Pl. xlv. A large variety of Greek pottery was found in the xxvith dynasty and Persian levels at Gerar. It seems likely that there was a well-to-do Greek population here, acting at first as traders connected with the Greek settlement at Daphnae at the other end of the isthmus. The figured vases are nearly all black figure and early red figure. The three lesser lekythi are all black figure, one with palmettos, one with ivy branch, and one with a figure group. The large lekythos is of early red figure, with finely drawn drapery. Professor Gardner would date it to 450, or reluctantly allow the possibility of its being as early as 460 B.C. As it was thrown away just before building granaries in 457 for the last Persian attack on Egypt in that century, the limits of date are very close.

The smaller pieces show the popularity of Oedipos and the Sphinx, of which there are two, or probably three, examples. The upper part of a face is from a fine rhyton, with part of a galloping horse on the top.

46. Pl. xlvii. Examples of some of the complete pottery of different periods. Most of the drawings were made from broken pots, or even from one fragment.

1 is a typical copy of Cypriote form FS 191, see pl. lx 84 h.

2 the earliest style at Gerar, found on basal clay at W 160, lxi 51 b.

3. Vertically burnished pot, DV 193, lvii 54 b.

4. Cypriote jug, BO 197, lx 87 d.

5. Cypriote pilgrim bottle, north of AC 201, lx 87 j.

6. Bowl on stand, FL 189, xlix, 17 j.

7. Bottle with strainer and trough, polished red, EP 194, lviii 67 s. An Anatolian form.

8. Bottle, CY 193, lviii 65 c.

9. Thick bowl, CY 193, xlviii 7 q.

10. Bowl with dwarfed handle, Ee 189, l 24 q.

11. Bowl with knobs, Fb 188, l 24 g.

12. Bowl with knobs, E1 188, l 24 l.

13. Assyrian pottery, FR 192, FR 190, 4 of A 194, CT 190, DR 195. See sect. 49.

47. Pls. xlviii to lxi. Forms of pottery from Gerar, placed in 37 series according to forms, from the most open to the most closed. Within each

series the order is that of level, because the variations can thus best be studied. In reality there are often three or four types blended in a series, which follow independent descent, and would normally have different corpus numbers. But as the dating is fixed at Gerar more exactly than on any ordinary site, it was better only to group connected forms, and subdivide the individual examples by dating. The term "burnished" is kept for surfaces which are thus entirely polished. Where there are only separate lines of pebble polishing, it is termed "pebbled." The following are only notes on colour or details.

2 e red faced. 3 j red faced inside, with white foliage pattern. 4 c light red, pebbled. 4 f fawn colour. 4 j reddish drab. 4 p red polished. 4 t limestone, adze-hewn outside, ground inside.

5 c to t, flat circular trays with brims, sometimes used for hearths. The later form 5 r has a lug handle, which is often pierced as in m, p, q, and t. 6 c hard light brown. 7 c, m drab; this series of bowls is the same as those of the viith century at Naukratis. 8 c hard, with white inside. 8 e pink, hard.

Pl. xlix. 12 b drab. 12 c bowl of lamp deposit group C. 12 g N. E. T. means the North-East Trench dug through the mound for exit. 12 e fawn. 12 red pebbled. 13 f dull red. 13 g red. 13 h red faced, pebbled. 13 k red pebbled. 13 v coarse brown. 14 e red burnished. 14 g red pebbled. 14 n red burnished. 15 c rough brown. 15 m, n drab. 15 u fawn. 16 d, f, j, m, n, p, s, u, w red pebbled. 18 d red wash. 18 h pale red pebbled. 18 p drab, with red wash, and white vertical lines. 18 t red burnished.

Pl. l. 21 b, c, e light red, whitened. 21 g lamp, spout lost. 21 j light red, drab facing, brown lines, more exact in projection on lxiii, 31. 21 l black bands inside. 21 m, three slight knobs, red, pebbled. 21 o red pebbled. 21 t polished red brown; the hollow brim turned in is unique in pottery, but like the glass of the Constantine age. 21 v red inside, pebbled. 22 c, e red pebbled. 22 g chocolate wash, 22 l black Greek, rough. 22 o black Greek, polished. 22 t, w, x drab. 22 u light red. 23 a crucible, with copper. 23 c brown, slightly pebbled. 23 e, f, g, h light red, whitened. 23 k, r red facing. 23 t dark red. 23 u light brown. 23 x drab. 23 v red pebbled. 24 b brown wash, dull. 24 f placed over the cremation jar 34 v. 24 h, o, y red pebbled. 24 w rough. 25 d rough brown. 25 h red

wash, pebbled. 25 p hard light red, four burnt ochre bands inside, fine quality.

Pl. li. 26 c fawn. 26 p black Greek. 26 t red pebbled. 27 b dull red. 27 d light brown. 27 f black with quartz grains and chips. 27 g, and four over it, all one deposit, B group, JD 179. 27 h, and three over, deposit, A group, JC 180. 27 m, red, rough. 28 b drab, or red rough. 28 d red pebbled. 28 g greenish drab, twenty handles around. 28 h red burnished. 28 m, q red face, pebbled. 28 n drab, 28 s red faced.

Pl. lii. 30 f pale red, whitened. 31 c irregular, light red. 31 g, EJ 189 has four handles. 31 k, Ep 191, thick red. 32 b, j, red pebbled. 32 e rough brown. 32 h hard red, polished, three feet. 32 n thin rough red. 32 p brown. 32 t rough red.

Pl. liii. 33 b to v all mediaeval Arabic, marked by girdle band, and red painting. 34 g pink wash. 34 h light red. 34 n buff with fine white specks. 34 t hard red brown. 34 v dull red, vertical pebbled, filled with burnt bones. 35 f light red with lime specks, drab face. 35 m white line on red face. 35 u pink body. 35 v fine thin red brown, with red ochre top. 35 x grey. 38 c grey.

Pl. liv. 42 n sunk in floor, CN 192. ES 190 smaller. EK 190 narrower shoulder. 43 m fawn, fine face. 43 n very hard, fine yellow ochre facing, perfect finish.

Pl. lv. 44 c very thick and heavy jar with bosses around. 44 f jar with side cup opening into it, drab. 44 g jar with side cup separate, which implies that such a cup was for flowers; brown with white chip, drab facing. 45 d black with white lime specks. 46 c also modified toward 46 p, or shorter neck. 46 p, AEE 194 has red face and white bands.

Pl. lvi. 48 d, h, n types of late Roman water jars, approaching the Arab forms, see xlii, 13, 14, 15.

Pl. lvii. 51 d drab. 52 c hard red. 52 l vertical pebbled. 52 m drab. 53 m drab. 53 s white polished. 55 l thin grey, smooth. 55 p black lines on red. 55 v was made with mouth down, then a lump for the base was turned and put on. 56 f soft brown. 56 h red polished. 56 q burnished. 56 t black band on red. 58 e, GG red; GQ rougher. 58 h drab.

Pl. lviii. 61 c red burnished. 61 e solid neck, drab. 61 h, j remarkable vases, black above, red below, with ridged necks, bosses imitating rivets at shoulder, and, on j, raised handles and three loop feet: about 1300 and 1250 B.C. 61 n red faced,

burnished. 63 c red brown pebbled. 63 h hard, rough, dark grey. 63 s butt, white polished slip, pebbled vertically. 65 c red, or pink, pebbled. 65 g grey. 66 c drab. 66 d smooth fawn. 66 j buff slip. 66 y drab, with coarse green glaze; see *B.S.A. Jerus. Bull.* 5, pl. iii, vii. 67 d dull red, vertical burnish. 67 j white facing. 67 l dull red. 67 p bracketting under a long spout. 67 q strainer of 8 holes. 67 s red polished. The strainer vases are from 183 to 194 level, or 1250 to 850 B.C. The form 67 s with side handle, filling at the spout, is Anatolian.

Pl. lix. 71 f red bands on white. 72 d, l, t red polished. 73 b, e, f black. 73 o black pebbled. 74 b red. 74 c red, containing rouge. 74 e rough drab. 74 g grey. 74 q drab. 75 h red. 75 p grey. 76 m thick, pebbled. 76 n rough brown. 76 o grey. 76 s red polished. 77 f black Greek.

Pl. lx. Cypriote and local imitations. 82 c to k are of fine ware from Cyprus, bright red with black lines. 83 is all rough imitation, 85 d is the earliest pilgrim bottle, before the xviii<sup>th</sup> dynasty. 85 q has black and red lines. 86 is a fine vessel of greenish white with full black lines; the form can be recovered but the neck is lost, 88 c is of fawn pottery, described with pl. xxxix. 88 j is part of a Mykenaeon pyriform vase, like those found at Amarna, while this would be about 1420 B.C., by the level. 88 m is red with brown bands. 88 p brown bands.

Pl. lxi. Lamps begin in the xviii<sup>th</sup> dynasty, with those of the deposits li, 27 g. The curved profile was flattened down continuously, as 91 e, l, n, r. After some attempts at deeper forms, as o, t, a flat pedestal form, u, ends the series. Later lamps, w to z, were copied from the Greek. In the time of Justinian, decorated lamps in relief, aa, descended from the classical types. Two other forms are entirely apart from this series; 91 g is a seven-branched lamp, one example being blackened by the smoke, of about 1250 to 1150 B.C.; 91 j is a section of a lamp with central cup for the water, to keep it damp and oil-proof. In Egypt the lamp was central and the water around it; here the saucer has a blackened lip. 92. Various forms of stems of bowls cannot be classed without knowing the form of the upper part. 93. Some little cups of Justinian date were found with the lamp 91 aa, in rubbish of the Roman settlement south of Gerar. 94 d is a strange form, with a deep cut down one side. 94 m is open at each

end, it might be for a drum, and the grooves at the end to fix the tying of the skin. 94 r may be a drain pipe. 96 d-u are ring stands for jars, which are so usual in Egypt. 98 c to y are various forms of lids and stoppers. 99 e to p are the wheels of the pottery chariots, see pl. xxxix.

Pl. lxii. Here the pottery has little value for dating purposes, as it does not come from regular stratification. At the top are four vases (cem. 1), from the only early tomb that was found, on the rise south-west of the cemetery. Two vases, 51 b and 74 v, were on the basal clay, level 160, at the tip of the spur of west slope, just at the foot of the rammed clay wall. After these the pieces are in order of level, but owing to west slope being the rubbish tip on that side of the town, pottery of one age might be left at very different levels. Some parts were at the same level as the rest of the town, such as the house with staircase at the head of the valley, burnt like the town, with similar pottery, only a foot different in level. But further out, the ground was entirely rubbish tips sloping in different directions, and on comparing types with those levelled in the town the differences averaged five feet one way or the other. The drawings here include many variants and some fresh forms, and need to be recorded on that account.

Regarding materials, 65 j is dark grey, as in *Tell Hesi* vi, 99, at 1600 + 150? = 1750 B.C. (about 150 years must be added to early dates there). This accords with the type being classed as Middle Bronze Age (*Pal. Mus. Bull.* No. 3, pl. v). In the middle of the plate is the prow from a strange model of a boat. It has a main deck below, to ensure flotation if water is shipped, and an upper deck which was probably only a half deck at the ends. The piece of a painted stand, 92 f, does not seem to have supported a bowl, but might well be a lamp stand. The fragment of Cypriote globular vase, with two circles, was over the burnt floor of WE 184. The large painted jar, 38 t, differs from any found in the main excavation. The little two-handled vase, 71 a, is finely finished, much better than any other local ware. Part of a very large store vessel, with wavy band outside, is placed at the lower part of pl. vi.

48. Pls. lxiii, lxiv. The fragments of early decorated pottery are here placed in the order of their levels. The colour is shown by the direction of heraldic shading. 1, 2 are of the bronze age

incised ware. 3 to 6, 8 to 13 are pieces of the leather pouch bowl on a bent withy handle, which is usual in Cyprus and Syria, and was imitated locally here. The levels are from 160 to 174, one fragment at JF 177, and a very degraded piece at GK 183. Practically this design was extinct so far as Gerar is concerned before the xviii<sup>th</sup> dynasty, though later elsewhere, and the beginning of it may be within a century of 2000 B.C. There was no change in the form of the handle between 168 and 177 level.

7 is a solitary piece of, apparently, Greek ware, but going back to before 1500 B.C. It is flat, and was 8 inches across at this part. The object drawn looks like part of a serpent, reared up, the body and the base being red, with a row of white spots along the edge.

Nos. 14 to 71 comprise the pieces of spiral decoration, from JC 176 to HK 182 and PR 183, or about 1650 to 1250 B.C. The spiral line is often double (15, 52, 54, 59), and the end is bent outward (15, 16, 17, 38, 54, 59); it is difficult to see what originated such a form. A search of all the fragments shows that the red line spiral (thin or thick) extends from 177 to 182 level, and the thin black from 181 to 183, thick black 180 to 184. The red is thus earlier than the black, which gradually superseded it. It is possible that the spiral is due to copying a spiral shell, and the double termination, everted, represents the animal. It might be a sea shell (nautilus?) or snail. With the spiral is often the rhomb (15, 19, 21, 39, 59, 61, 62, 71), a favourite element in Syrian ornament, and see lxii, 38 t. Another usual element is a group of vertical lines, 5 in no. 38, 8 in 55, 2 in 56, 3 and 4 in 63. Sometimes a band of scale pattern comes between the lines, as between 5 and 5 lines on no. 15, or between 3 and 4 lines on 63, or between 5 and 2 lines on 71. In 38 there is a copy of the well known vertical band with a semicircular group on either side; in the alabaster frieze of Tiryns, and glass of Menidi, the band is evidently supposed to overlie the semicircles, as if binding on an oval patch.

A later growth of the spiral is on smaller and thinner bowls, with wavy lines, 66, 67, 68, 74, 78, 79. These are found at HK 182 and HA 183, or all of one age, 1150 B.C. The makers of these bowls seem to have crushed the older spiral users, and we cannot but ascribe these bowls to people of the great migratory movement of the

xiii<sup>th</sup> century, and probably to the Philistines, as recognised by Mr. Phythian-Adams (*B.S.A. Jerus. Bull.* 3). By the occurrence of these bowls, entirely at one level, we may conclude that they were brought by migrants, and were not due to a long continued trade or a local manufacture.

Another common decoration is the group of concentric curves. This starts with the curves and cross-band on 38, and continues on 40, 50, 53, 65, 76, 81, or from JS 180 to HA 183. It was usual on the Aegean pottery of 1370 B.C., as on the sherds from Tell Amarna (*T.A.* xxvii-xxx). At Gerar it would certainly be of that century.

The wavy line decoration belongs to a very different style, see 18, 24, 31, 37, 43, 44, 45, or JF 177 to HU 181, within the xviii<sup>th</sup> dynasty. Usually the wavy line is put between straight lines to emphasize it; once it appears with spirals, 44. Crossing lines of colour appear in 25, 26, 27, 69, JE 179 to FR 182, contemporary therefore with the wavy lines.

The animal figures 28, 33, 34, 35, 36 are another compact group, KA 177 to JB 180, of the same age as the wavy and cross lines. The disappearance of all these at about the close of the xviii<sup>th</sup> dynasty seems to be due to the displacements of peoples at the break-up in Syria after Akhenaten. The animal figures accompany the wavy lines on pottery at Tell Harbaj, termed Late Bronze Age (*B.S.A. Jerus. Bull.* 2).

Large blocks of colour occur at no. 30, and the same form at 75 (KA 179, HN 183), and also at 41, KA 180, and 47, JG 181.

The parallel line pattern 72 was used at 1370 B.C. (*Amarna*, xxvii, 41, xxix, 90-4), but here the level of this fragment would be a century later; being only a single example, it might have been old when lost.

As a whole, the dating at Gerar agrees with that at Amarna and elsewhere as closely as the difference of locality and conditions would allow.

49. Pl. lxxv. The peculiar pottery, nearly all found in one grain pit, of about 700 B.C. has been already referred to the Assyrian invasion, see section 46. The stray examples are FR 190, 192, which were at the edge of the mound beyond our regular excavation, and uncertain in stratification; also CT 190 which is over the rubbish region of FL where levels may be low. There is no reason to question the uniform date of the great deposit of hundreds of sherds all found together at DZ 194,

pl. x. The most numerous were thick plates of hard ware, nos. 10-23, distinguished by the sharp angular stepping at the bottom, and grooves at intervals on the flat base. The colour varies from creamy white, drab, pale fawn, warm fawn, to dark fawn brown. Most have a smooth matt surface, but many are burnished, and in some the clay was a fat one which took a high polish in lines. No. 12 is of a grey-brown not so highly baked, and greasy looking. The forms of the brim are given in nos. 10 to 17. The number of grooves on the shoulder is the readiest means of sorting them, and these from none to five are given in nos. 18 to 23. Nothing like these has been found before in Palestine.

With the plates were fragments of a great number of thin bowls. These are of two types, the wide forms 1 to 3, and the tall neck forms 4 to 9. None could be entirely recovered. The ware has always a matt surface, though the paste is very fine. The thin brown varieties are of  $\frac{1}{12}$  to  $\frac{1}{16}$ th inch thick; the pale drab are only  $\frac{1}{20}$  inch, the thinnest pottery that I have ever seen. The thinness of this resembles Assyrian dishes, and the forms 1 to 3 are like an Assyrian silver bowl (Brit. Mus.) and are well known in bronze vessels of Persian age in Egypt. The dimpled pottery, 4, is very peculiar, and like some Roman ware of the second century A.D. It may be a Mesopotamian style, which was brought west by the captives of Trajan from there. Other such cases are the Late Celtic ornament brought in by the Gaulish captives of Julius, and the plaited borders of mosaic brought in by the Dacian captives of Trajan. From nearly all these pieces being found in one rubbish pit, it seems that they were the table service imported from home by the Assyrian governor.

## CHAPTER XI

### ITALIAN AND ROMAN REMAINS.

50. Pl. lxvi. Beside the great influx of Cypriote pottery, there was another link of Mediterranean trade in the viiiith century B.C., importing patterned glass such as is found at Cumae, and is usually supposed to have been made there. Such glass is evidently in imitation of the Amarna products and Egyptian work of the xviiiith dynasty, and is often confused with that by collectors. The later product

is always inferior in the finish of the surface, and poorer in design. Three examples were found of the modelled heads in glass. The earliest is lxvi 2 in brilliant white and yellow, found at CV 195, or about 800 B.C.; the next is the long head, no. 1, of dull glass, at AD 198, about 660 B.C.; the last is no. 3 of very dull brown and white, at ABB 200 level, or 600 B.C. The thirty fragments found in the town are too small to be worth illustration, but they serve to give the extent of the dating. The numbers at each foot of level are:—

1	under B	194	B.C.
2	under B	195	800
4	2 under A, 7 under B	196	760
5	under A, 4 BM	197	700
5	3 AC, AD, BP	198	660
1	BT	201	
1	unlocated	202	
4	"	203	500

The main production was, then, during the viiiith century, and it was over before the xxvith dynasty. The few examples at a higher level may be due to later occupants turning up earlier ground.

51. The Roman remains are all of the late period, probably due to settlement under Justinian. At about a quarter of a mile south of the town, there was a great cistern and portions of four large mosaic pavements. All of these were of usual circular pattern, each border line swerving round a small circle at each quadrant, to pass on as the border of the next circle. Some pavements had a simple plait pattern border. The difficulty of finding a suitable place to relay such pavements, and the cost of removal, deterred the Department from immediate action, or yet from resigning them to other museums. They may be removed in future, if not ploughed to pieces meanwhile. Large pictorial pavements have been ploughed up in recent years at Khurbet Umm Jerar.

We searched for early graves but only found one, amid many graves of Roman age. These were narrow chambers of local concreted limestone, roofed with slabs of the same. No bones remained, nor any objects.

Near the cemetery there was a rubbish pit which contained much broken pottery, also glass, and one perfect glass vase of extraordinary nature, see lxvi 4. It is 4.26 inches high, 3.56 to 3.63 diameter, colour pale blue green. The surface had decomposed to white; but after flaking this coat off there was

a strong blue iridescence. The unique feature was the connection of the shoulder to the base, inside the globular body, by fifteen threads of glass, all quite straight. On the shoulder there is a slight flattening of the face over each thread; but below there is a trumpet end to each thread, sometimes going inwards a quarter of an inch. The threads seem to be about a thirtieth of an inch thick in the middle. They must have been formed when the bulb was half blown, by passing a hot wire through from base to top and carrying the glass with it to unite the parts. On then blowing the bulb fully, the form could be restored and the threads stretched out. Now in the Jerusalem Museum. The pottery lamp, lxi, 91aa, found with the vase, serves to show that it is of the Byzantine age.

52. Pl. lxxvii. On the top of the mound, among the buildings of Persian age, was a part of a column with feeble drafting round the end. It would presumably be of the middle of the 7th century B.C.

During the mediaeval times there had been some Arab occupation on the mound, leaving many grain pits, and various burials. A few of the burials had bangles of glass of variegated colours, some of which were perfect, and are here photographed, pl. lxxvii.

At Gaza we dug in the bottom of the ravine through the cemetery, in front of the English (C.M.S.) hospital. At 31 ft. below the hospital gate, a little above the level of the country fields outside, there was paving with Roman pottery of about the 1st century, and a marble torso of good work, here photographed slightly enlarged, pl. lxxvii.

## CHAPTER XII

### WEIGHTS AND TABLES.

PLS. LXVIII-LXX.

53. MORE than two hundred weights were found in the excavations, good evidence of the commerce of Gerar. Of these, 14 are set aside as being metal weights, so much corroded that the original value cannot be stated. The 198 stone weights are recorded in pl. lxxviii, in the same manner as in my *Weights and Measures*. The number of each weight is given in the register, in continuation of the Catalogue: the material and form in the *corpus* come next; then the original weight in grains, allowing for any loss; the multiple of the unit;

the result for the unit; lastly the position in the town and notes of loss which has been estimated, also marks on the weights.

The relative frequency of the eight standards differs much from the proportion in Egypt. Stated in percentage, the proportions are:—

	Egypt	Gerar	Gezer
Peyem	9	13	9
Daric	16	6	8
Stater	14	5	6
Qedet	29	23	30
Necef	9½	15	10
Khoirine	5½	19	18
Beqa	10	14	11
Sela	7	5	8

Thus the Syrian standards of the Peyem, Necef and Khoirine are all much more usual at Gerar than in Egypt, and this is at the expense of the Daric and Stater. The Qedet is surprisingly common at Gerar, almost as usual as in its own country. These differences point to home trade, and Egyptian, being the main business, and the distant trade to Babylonia, Greece, and North Syria, being less usual than in Egypt.

On separating the periods of the towns, there is some further light on the trade, the number of examples at each level being:—

Towns	Dyn.	P	D	S	Q	N	K	B	L
AB	xxvi	3	2	1	4	5	4	3	2
CD	xxiii	3	4	2	3	0	2	3	0
EF	xxii	2	3	1	13	9	7	10	3
GH	xx	9	3	3	16	8	12	8	3
JK	xviii	1	—	—	1	1	2	—	—

The dominance of the Qedet is therefore entirely in the xxth-xxiind dynasties, the periods of Tanis and Bubastis. The Beqa naturally flourished along with the Qedet, both being Egyptian; but it is surprising that the Syrian standards, Peyem, Necef, and Khoirine, were all much more abundant at that time.

The weights at Gezer, stated by Prof. Macalister, give rather different proportions. They resemble the Egyptian proportions more than those of Gerar, in every standard, and only differ widely from the usage of Egypt in the Khoirine, which bore a high proportion as at Gerar. This shows that Gezer was mainly under Egyptian control, while Gerar looked to local Syrian trade.



54. Two groups of weights, in course of shaping, were evidently the stocks of makers of weights. Haematite nuggets were sought in the stream beds, and then ground more or less to fit the standard next below the weight. The unused nuggets, when broken, show a radiated structure, and traces of yellow pyrites. They seem to be pyrites nodules from cretaceous beds in the Beersheba basin, leached by hot springs till the sulphur was removed and the iron oxide consolidated.

The two groups belonging to makers of weights, and some other batches, were of the following standards:—

		P	D	S	Q	N	K	B	
HF	186	4	—	—	5	3	4	2	18
GK	184-5	1	1	1	3	2	1	1	10
GJ	185-8	1	1	—	2	—	—	1	
GN	182-6	—	—	2	1	—	2	1	
AW	199-202	1	1	—	1	2	—	—	L

There seems to have been very slight personal preference for one standard more than another, the proportions being like those of the whole town. On separate weights in the catalogue, it may be noted that *nug.* is sometimes put for the form, meaning that it is a natural nugget slightly adjusted, but not trimmed to any regular form. No. 5491 is of malachite, rubbed down into a rough tetrahedron; it might be only in course of grinding for paint, but as it agrees with the commonest standard, it is likely to have been a weight. The three weights 5557 to 5559 are the important ones (see pl. xvii, 52-54), for their accurate agreement, for their fine domed form, for their bearing marks, and for giving the best determination of the standard, exactly in the middle of the cowry-shaped group. The lion weight, xvii 51, is probably Assyrian, being found just below the Psamtek fort. It is not in the list, as it is of bronze and deeply corroded. It was originally of 10 Darics.

55. Pl. lxix. Table of grouping of all objects, excepting the pottery. Here the lines are of the different levels A to K, and the columns distinguish the chambers A to Z. Every thing found in any chamber or area marked on the plans, is here entered in its appropriate square with the plate references. Thus, when the connections of any particular object are required, it is only necessary to look for the first letter on a level, and the second letter in a column, in order to find all the plate references and levels of the contents of any room.

Where sites are of mixed date, as in granaries, or ash heaps, the block of references is bracketted, to show that the levels are not of the same values as elsewhere.

Pl. lxx. Table of the grouping of the pottery, in similar compartments to those of the previous table, so that the whole results can be readily put together. This method of cross record gives the advantages of publishing groups together, along with the classification by material, style, and date, which is needed for following the history of forms.

56. Pl. lxxi. Byzantine inscription on the threshold of a native house at Gaza, dated in the 16th of Xanthikos, year 629. As the era of Gaza was 63 B.C. this date equals 567 A.D. or the second year of Justin II, immediately after Justinian. My wife learnt of this inscription from an assistant surveyor in the neighbourhood, and obtained leave to copy it. Prof. Gardner translates it as follows:—"who, while completing the contests in the prize-winning stadium, is gone from us, not yet having passed his 17th year. He was buried on the 16th of Xanthikos in the year 629, 26th of Indiction." The first line, and fragments above, cannot be rendered properly owing to the loss of the subject in the preceding part.

Another portion of a Byzantine inscription is here put as a stopgap on pl. xiv. It is now on the flat roof of a house in Gaza, re-used in the construction. I found it by the kind help of Mr. Stack, the municipal engineer of Gaza. Prof. Gardner reads the remaining part "Place of burial of the body of . . . slave of . . . Month Loos . . . Indiction . . ."

## CHAPTER XIII

### THE CHANGES OF LEVEL.

57. Pl. lxxii. The table of sizes of bricks is described in chap. iii, sect. 12.

The map here is to show what the outline of the estuary of the Wady Ghuzzeh and coast would be, at a level of 125 feet above the present sea. In the lower view on pl. ii is a terrace level, 25 feet above the Wady Ghuzzeh in the foreground. This is not the level of the hill below the mound, but a terrace of later deposit lying unconformably against the clay hill, 30 feet higher, on which the artificial mound was built. This terrace of sand and loam has Roman pottery in all levels of it, from the stream level upward. A mile or so further

up the wady, Roman pottery and glass were again found at all levels of the deposit. This deposit is stratified in perfectly horizontal beds, the lower ones more clayey, the upper more sandy. The same distinction can be seen running for hundreds of yards, proving that the strata were not due to rapid wash down the valley, but to slow deposit in still water, uniform over long stretches. The top of the deposit is at a uniform level all over, up to the edge where the older land surface of the valley crops out. On bringing the eye to the ground levels, it ranges over the whole surface without a foot of variation, except where the soil is eaten out by surface drainage.

To trace more of this deposit, I went three miles down stream to Khurbet Umm Jerar, an extensive late Roman site on the north of the valley. At that place the stream has cut 20 feet lower, but the terrace level is still just the same, a little below the 135 feet contour of the government map. The top of it is just as regularly level, and it is stratified in horizontal beds, forming a cliff of about 50 feet high above the stream. Within a foot or two of the base, late Roman potsherds are found. In the deposit is a rubbish tip of Roman pottery from about 18 to 30 feet above stream. At the top of the deposit, there are 2 feet of fine silt over a compact layer of Roman pottery 2 feet thick. Thus late Roman pottery is found at all levels from the base to the top of the deposit. The denudation of the slopes of the country on either side cannot be the source of the silting, because the whole silting took place within a few centuries, and no more has occurred for 1300 years. The source of silt must mainly have been the wash from the Beersheba basin, which even in dry seasons, now, will send down enough silt to form an inch of deposit in a year, requisite for the accumulation that we find.

58. On the map, the contour of about 125 feet is shown (drawn slightly below the 135 feet contour of the official map). This contour makes evident that no dam could have held up lake water to this level unless it was two miles across, and there is no trace of a dam or ridge in the valley visible from Umm Jerar. Any dam would also have to be 50 feet high in order to cause a lake of that level. If an artificial lake is out of the question, the only solution is that there was a sea estuary caused by a depression of the land to 125 feet below the present level.

59. The implications of such a depression must be faced. Near Deir el Belah, 4 miles south of the Wady Ghuzzeh on the west, there is late Roman pottery only 20 feet above the sea, which must be either before or after the depression. But that there was a depression here is shown by immense masses of quite recent shells on hills 60 or 80 feet over the sea. Such a depression would flood around Gaza, but would not cover the city site: also the sea might have been dammed out at the narrow south end of the Gaza valley. All of this coast needs careful search for deposits and terraces at about 125 feet, which would have much historic value now that the date is fixed to the Roman age.

Another consideration is the system of settlements all over the south country, of the age of Justinian, perhaps beginning under Constantine. This class of ruin is known as *khurbah*, and all that I have seen are of this period. The coins brought up by the natives range from Constantine to Justin II. None of these *khurbahs* are below the 125 foot level. Now if the sea were in its present position, settlement would be most favourable in the lower levels: yet there no such ruins are found. This is strongly in favour of the lower ground having been submerged. Then another consideration is that if the water table were raised 125 feet, these *khurbahs* would be close to the moist ground, and so their inhabitants would be able to grow crops regardless of a full rainfall. This would account partly for such a flourishing occupation of the land at that period.

At Alexandria it is certain that the land was at least 22 feet higher, from the submerged tombs, quay walls, and the Ptolemaic and Roman city being all below water level now. Besides that, there is a deposit of horizontal strata with Roman pottery on the sea face up to at least 18 feet above the present sea. Thus the land has been at least 40 feet lower and has recovered 18 feet of that amount. With a change of 40 feet or more at Alexandria, and the known frequency of great earthquakes in Palestine and Syria (as at Antioch), it does not seem impossible that a sinking of 125 feet might occur at Gaza, and be recovered later. That the present coast line is very near that of the Greek period is proved by the distance of Gaza from the sea being that stated by Strabo in his Geography.

## CHAPTER XIV

## CONNECTIONS WITH THE RECORDS.

60. NOW that the archaeological results are garnered, we should consider the relation of these to the records that we have, as they enable us to bring a breath of reality to the debates of purely literary criticism. To understand any record, we must have some visualisation of the conditions and the course of life in which it was written, in order to get an insight of the view and meaning of the writer. For instance, from Gregory of Tours we have a perfectly honest account of what he saw and heard and believed. It is perfectly true from his point of view, though we should understand much of it quite differently. So it is with all writers, the further we are from their conditions, the more we diverge from their interpretation of their experience, without at all invalidating the facts which they record.

To live at Gerar, and to turn over the settlements from the days of Abraham down to the Persians, gives a background for realising much that we read. Even the trifles persist; two little girls in the work were called Hagar and Dalilah, though we never raised a Samsun among the boys. The prominent feature of the place was the corn supply. The immense granaries of the Persian age proved what a large amount could be raised here. It does not pay to transport grain on a great scale more than a day's journey, when donkeys are the vehicle, as we see by the 10 mile radius of the city states (*Social Life in Egypt*, p. 4). These granaries would have been built elsewhere, unless they could be filled from that valley. In the earlier times, the importance of grain appears from the great quantity of sickle flints. From a small fraction of the early town we raised flints for 80 sickles. Of that age, we read that Isaac sowed and reaped an hundredfold.

What was the Philistine Abimelech doing here, nine miles from the sea? What was a Philistine doing at Ekron? also as far from the sea. Why were the sea-faring Philistines in the heart of two great corn centres? Coming from the rocky land of Crete, or S.W. Asia Minor, they settled in corn lands where they could get grain for export. Crete with a rich civilisation, in a mountainous region, was bound to import food, as Greece imported grain from Egypt in the days of Pindar. The Cretan

knew Palestine from old times, when he traded round the coast to Egypt in the 1st dynasty. The grain trade may even have started then, as well as the oil trade, which is vouched for by a Cretan oil jar found in Egypt. The position of Abimelech was, then, not that of a chieftain, but of a corn factor to gather grain supplies for the Cretan shippers. The repeated name here in two generations, is merely a title, "my father is the king,"—a deputy in possession. The only other Abimelech was the son of Gideon who certainly acted as a *melek* of his tribe. When the requirement of collecting corn is realised, the meaning of the narrative is very plain; Isaac "became very great; for he had great possessions of flocks . . . and herds, and great store of servants . . . and Abimelech said unto Isaac, Go from us, for thou art much mightier than we." To have a great Bedawy settlement come to eat up the corn supply, which was needed for export, would undo the whole purpose of the Philistine trade centre. That the Philistines here were only traders and corn factors, to begin with, accounts for their not being named as a people in the campaigns of the xviiiith dynasty.

61. It has been too readily supposed that all similar narratives could only arise from a single instance. That must depend on whether the conditions were likely to be repeated. Now the position of the Bedawy female chiefs, Sarah and Rebekah, is greatly misunderstood if we read it as if it were in modern usage. There was no reason for patriarchs to go and pitch close to a Pharaoh or a Philistine, and even to put their tent facing his windows. There was no reason for the women to go unveiled. There was no reason to disown their marriage, as it is clear there was not the slightest danger if they were married; Pharaoh reproved Sarah for her conduct. Yet this conduct was quite customary, as Abraham said to his half-sister, "at every place whither we shall come, say of me, He is my brother." Such a sister-marriage, and such a detached mode of life, may seem strange to us, but it is recorded plainly enough, though discreditable in the eyes of more settled peoples. Clearly these female chiefs were very independent, and would rather prefer to join a rich and comfortable household if they had the chance. In fact, Rebekah was practically thrust on Abimelech. Now if that was the state of society in the Bedawy life then, the same scandal would naturally recur whenever the Bedawy came up against the stricter

life of the Egyptian, or the Philistine who was a fair-haired European. How independent Sarah was, is seen at the last, when she lived in her state tent at Hebron, while Abraham lived at Beersheba. That tent was solemnly brought by Isaac in order to instate Rebekah as the female chief. The three similar narratives each would naturally occur, under the conditions of life which we see must have prevailed. How a Bedawy tent could be inspected from Abimelech's window was evident at Gerar. In pl. iii, top view, is seen the only pitching ground of the Bedawyn, north-west of the city, just below the best end of the site. From the mound one looks straight into the tents, which all face that way, back to the sea winds, and one sees every man and woman and infant in the place. Given the condition of society here described—which certainly no later writer would invent, there is nothing in the narratives about the patriarchs at Gerar but what is perfectly natural and to be expected in that country.

62. In connection with the Philistines, it may be noted that the absence of a city mound at Akir has been thought to bar that being Ekron. But when we realise that the purpose of settling at Ekron was for the corn trade, in the heart of the rich Shephelah plain, it is clear that only some store rooms were needed there, and not a considerable city. Another point in Philistine history seems worth notice. At the conquest by Joshua it is expressly said that he left the five cities of the Philistines entirely alone; that small group in the south was the whole of their possessions in 1150 B.C., but by 1030 B.C. they were settled in the Jordan valley beyond Gilboa at Bethshan, where Saul's body was hung on the wall. In this hundred and twenty years they had spread far northward. If this narrative of Joshua had been written up in later centuries, after their occupation of Bethshan was familiar, the writer would have described Joshua as defeating the Philistines in the north. The limitation of them to the south, as described, shows that the detail was familiar to the writer, and marks the age of the narrative. The active oppression by the Philistines did not begin till about 1070 B.C. (see *Egypt and Israel*, p. 55). The entry of the Philistines as a migrating body is marked at Gerar by the extinction of the old decorated pottery with large spirals and Mykenaeen decoration of 1650 to 1250 B.C.; and the coming in of the bowls with wavy lines recognized as Philistine

importations from a Greek home land (*B.S.A. Jerus. Bull.* 3). These bowls are of about 1220 to 1160 B.C. Thus the dates of the Philistines, from pottery and records, are

by products at Gerar	1220—1160 B.C.
repelled by Ramessu III	1194
not north of 5 cities	1150
spread and attacked Israel	1070—1030
held Bethshan in north	1030
David conquered Philistines	1000?
and Edom (Gerar)	995?

As David took Jerusalem in 1010 B.C., and after that extended his power west and south, long before the close of his reign, the last two dates cannot be far out.

In connection with the Philistines, who were smiths (1 Sa. 13, 14), may be noted the common use of iron in the 12th cent. B.C. for chariots. Such are named in the South (Jud. 1, 19), at Bethshan and Jezreel (Jos. 17, 16—18, about 1170 B.C.), of Jabin (1100 B.C.), and Og's bedstead of iron. Such a common use of iron seems an anachronism, compared with its rarity in Egypt, and the iron age of Europe only beginning about 900 B.C. But at Gerar the beginning of small iron work at 1300 B.C. and the large massive hoes and plough points at 1170 B.C. are in full agreement with the records, which evidently belong to that age.

63. Another point of connection with history is the abundant use of gold. The frontlet was at HU 185, the group of gold earrings at GA 185, the heavy gold earring, i, 3, at GV 186, the group of beads with a gold earring at FZ 186. Only a single gold earring was found at a different level, 177. The independent dating of this gold level is at 1180, 1190, 1160, 1140 B.C. in relation to the town as built in 1194. As probably all of the gold had been buried in the floors for safety, and so at too early a level, the actual dates of it might well be, like the latest group, 1140 B.C. Now Gideon delivered Israel in 1144, when he slew the Midianites so greatly, and asked for their earrings as his prey, "for they had golden earrings because they were Ishmaelites." He thus got 1700 shekels of gold, from about that number of men, as an earring weighs about half a shekel, total about 30 pounds' weight. More than that, he had "ornaments (*saharonym* crescents) and collars (*netyphuth* pendants) . . . beside the chains (*onequth* necklaces) that were about their camels'

necks." All those being named as the spoil of Gideon were probably of gold, or gilt. This great abundance of gold just at this one period points to the Midianites having found a large supply, which was soon exhausted. It is within a few years, or at most a generation, from this date that nearly all the gold in Gerar is found, in four different deposits. It is unlikely that the knowledge of this particular period of riches would have been preserved without a contemporary record, such as we have in the book of Judges.

64. The next contact with a record appears in the group of eastern connections, at about the age of Shishak. The pottery models of chariots (xxxix, 12-14) and the wheels both smooth and spiked (15, 16, 17, 18) are familiar in Assyria. But, going much further east, they are equally found at Anau in Turkestan, noted in sect. 39. This fixes the type twice as far from Assyria, as Assyria is from Gerar. The Anau dating is put before 2000 B.C. by Pumpelly, or before 1000 B.C. by Schmidt. As the chariot is found at 970 B.C. in Gerar (FJ 188), it could not originate the Anau figures; the movement must have been from, and not to, the East. The wheels are dated by ES 188, EM 189, to 970; ED 190, to 900, and two later. The whole idea of these square wooden box chariots or wagons belongs to the steppe dwellers of Asia, the Hamaxobioi and Hamaxoikoi, and is naturally to be derived from these nomads.

A peculiar type of bronze arrow with a tang on the side of the socket (xxix, 2, 5, 9) is found at EH 188 about 970, ED 190 at 900, and FG 192 at 850 B.C. Such forms come also from Tomsk, Perm, the Caspian, and pass on to eastern Europe.

Another peculiar type is the triangular arrow head (xxix, 12-22), found at FF 190 about 900 B.C., EG 192 at 900, and near N under the cobble wall 193, at 850 B.C. Such forms come also from Minusinsk, Altai, Perm, Siberia, S.W. Caspian, and pass on to northern Europe.

The humped oxen are shown in pottery models found at EF 189, EX 190, EH 191, at 970 B.C., and at EW 188, FJ 190 at 930 B.C. Those found at FL were in a dumping ground for rubbish, so not well dated. Now the humped ox is especially Asiatic, as in India, and does not extend west of Mesopotamia. Yet there are from Gerar 19 humped oxen figures, and not one straight-backed.

With these eastern links before us, it is well to note that the iron sickle forms are more like those of

Nineveh and Anau, than of any other region. Here is, then, a series of connections with Central Asia which seem to arise about 970 B.C., and to be frequent at 930 or 900. This forms a close parallel to the conquests by the Kurd Saladin and his brother Turanshah in Syria and Egypt, with a picked body of Kurd and Turkoman troops, about 1170 A.D. That the mediaeval movement was the greater change of the two makes the earlier migration the more likely. Turkish troops were already used in Egypt by 1060 A.D.; the movement was gradually coming on, till its full power under Saladin. The lead in the earlier movement just coincides with the activity of Sheshenq or Shushan-qu "the man of Susa," who began as a condottiere in Eastern Egypt by about 960, as he married the heiress of the Tanite kingdom before his taking the throne in 952. He was probably born about 1000 B.C. as he died at 930, and left an heir who lived till 894. So it would seem likely that, about 970, Sheshenq would be pushing westward with a body of Turkoman troops, as mercenaries looking for an opening. They were not a conquering migration, as they must have crossed the dominions of David and Solomon, within the reign of Solomon but without any political disturbance. Sheshenq was king in Tanis fifteen years before Solomon's death. We read of the slaughter of every male in Edom by Joab under David during a three months' search. This would leave the south country bare for occupation, and clear the track for easterners, coming down through Bashan and Moab, to reach Gerar, on the way to Egypt. This seems to place this eastern movement in a reasonable historical setting.

65. In the period of the Jewish monarchy, the external influences were entirely western. The Cypriote pottery, which was rare in earlier times, became very common and was largely imitated locally. From further west came the Cumaean glass, which appears here about 800 B.C., and was at its maximum about 750. This would be quite compatible with the history of Cumae, which had risen to full activity by 700 B.C., during a century or two before.

The mass of Assyrian pottery found, belonging to about 700 B.C., agrees with the account of the Assyrian invasions of Palestine and Egypt at that period. The great fort of the reign of Psamtek is what might be expected, for he held the district as his frontier against northern invaders. The

Persian granaries show an unexpected branch of the careful preparations and organisation of that great civilising power, like the vast system of roads and the storing of treasure as an organ of government.

Thus in every age it is seen how the material remains at Gerar help in understanding the records that we have, and give a physical basis for history which substantiates the contemporary accounts.

## DISTRIBUTION

THE objects that came to England have been kept together, excepting duplicates sent to local museums. It is hoped that, in some way, a museum of Palestine history might be established in London, and as the Gerar series will probably be the best type set for dating, it is requisite for any permanent collection. At present neither the British Museum nor the Imperial Institute have space for such a collection; it is therefore stored in boxes at University College until more enlightened times may arrive.

The objects kept for the Palestine Museum at Jerusalem were naturally many of the best, and are therefore mostly published in the plates here. They include pl. I, 2, 8, 9; xvi two sets of sickle flints; xvii, 2, 3, 4, 6, 7, 8, 9, 10, 12, 13, 25, 27, 29, 31, 32, 37, 38, 45, 46, 47, 50; xviii, 2, 4, 6, 10, 15, 16, 26, 32 and three more; xx, 5, 17; xxi parts of 3, also 3 A and samples of others; xxvi duplicates of 2, 3; xxxiii, 32; xxxv, 6; xxxvi, 41, 42, 44, 49, 50; xxxvii, 6; xxxix, 7, 9, and seven other pottery figures; xlvi, 4, 7, 9, 10, 11, 13 and 48 other pieces of Greek vases; xlvii most of the perfect pottery, including others in the drawn plates; lxvi, 4; lxvii, 1, 2, three as 5 to 8.

The objects distributed, so far as figured in the plates here, were as follows:

British Museum. xvi two sets; xxiv, 33; xxvi, 6; xxvii, 11; xxx, 27, knife and chisel; 4 lance heads; xxxii, 15; xxxiv, 23, 31; xxxv, 24, 26; xxxviii, 13, and seven other figures. Pottery 5 p, 7 m, 12 b, k, 14 y, 16 m, 23 m, 24 b, 35 f, 42 n, 53 x, 57 u, 71 l, 73 e, 74 c, 76 f, 77 b, 83 p, t, and eleven others.

Manchester. I, 7, 11; xvi two sets; xvii, 30, 36, and three others; xviii, 7, 15, 21, 24; xx, 13, 23; xxi, 6; xxiv, 3, 22, 32, 46, 50; xxvi, 5; xxvii, 18; xxix, 15, 36, 49, 58; xxx, 22; xxxi, 60; xxxii, 23, 28; xxxvi, 36; xxxvii, 2, 17; xxxix, 13; xli, 16. Pottery 12 f, g, k; 27 h, 53 f, 71 l, 73 e, 77 d, 91 d, g, j, x. Weights 5423, 5447, 5454, 5476, 5534, 5562, 5592, 5604, and many unfigured objects.

Oxford, Ashmolean. I, 12; xvi two sets. Pottery 12 e, k, 14 r, 16 u, 17 e, 23 m, 34 n, 54 p, 57 n, 61 m, 72 l, 76 o, 78 p, 83 c. Weights 5431, 5450, 5458, 5486, 5535, 5539, 5588, 5603. Also many unfigured objects.

Smaller groups were sent to Aberdeen, Belfast, Bolton, Brit. Mus. Prehistoric, Cambridge Ethnological and Fitzwilliam (6 scarabs), Dublin (weights 5475, 5497, 5505, 5506), Glasgow, Hague, Horniman Museum (weights 5470, 5483, 5485, 5502), Hull (46 shells for identification), Oxford (Pitt-Rivers), and Rochdale. Beyond the specified material these things were duplicates.

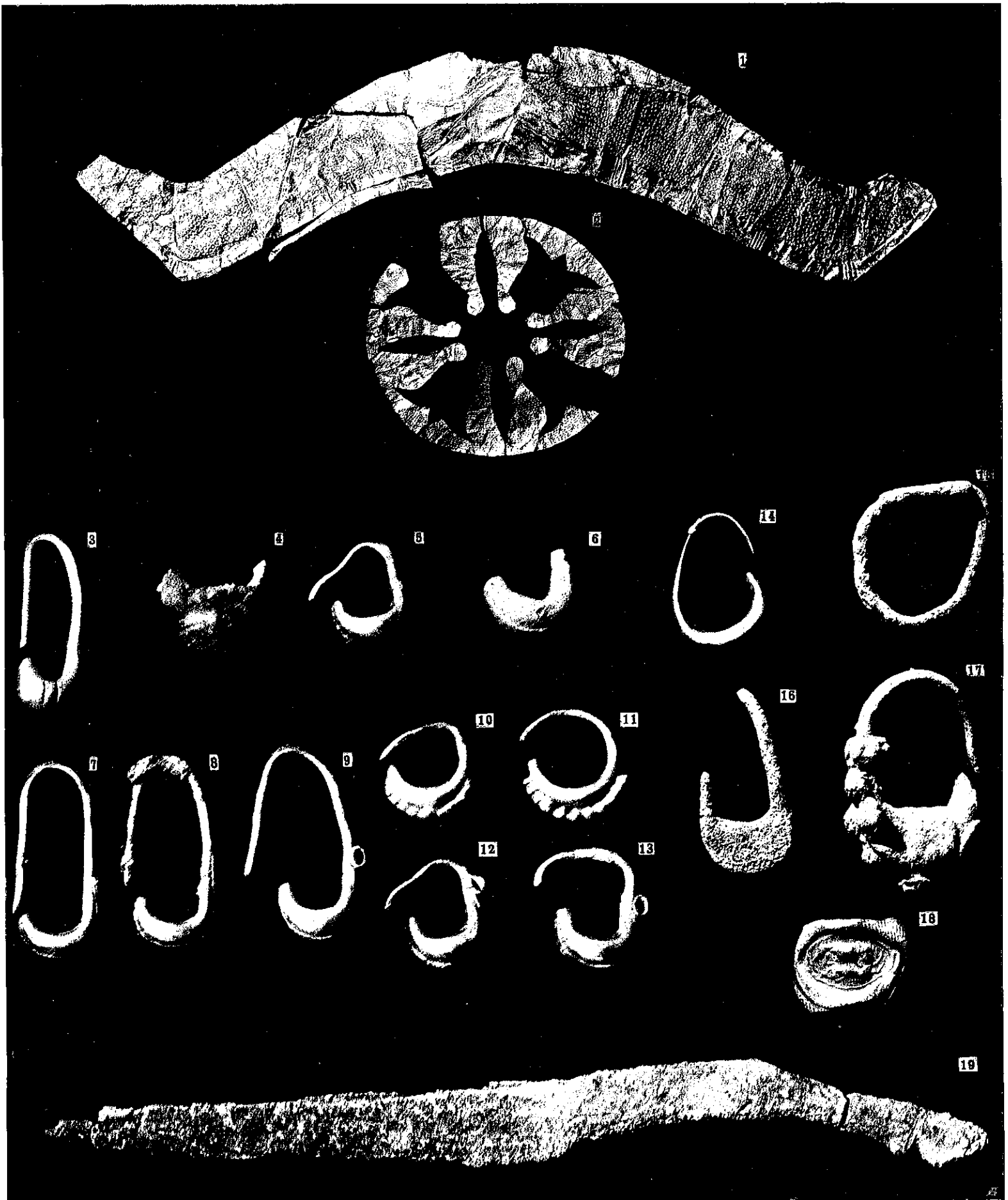
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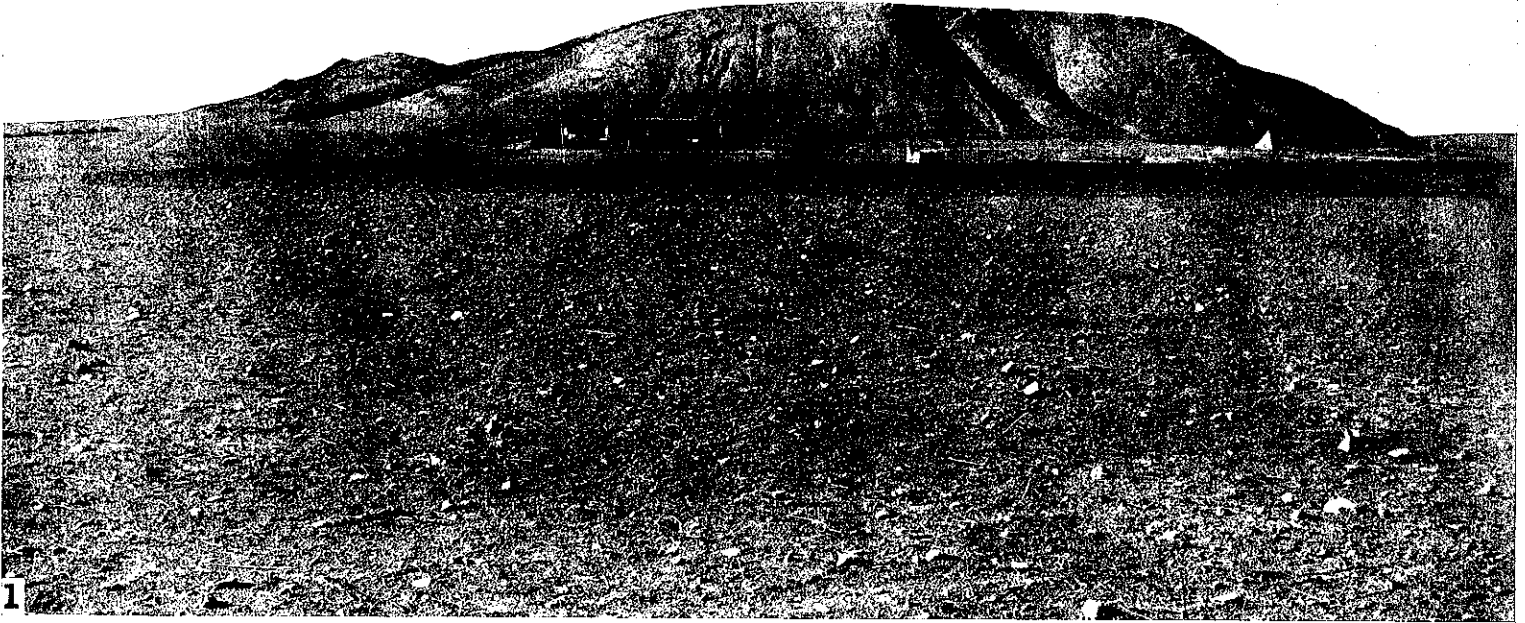
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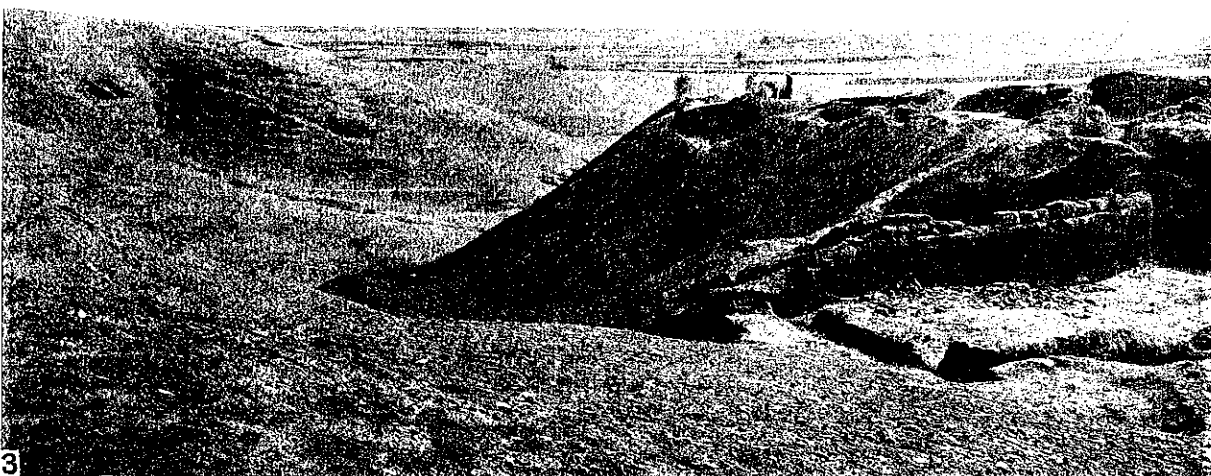
EAST SIDE.



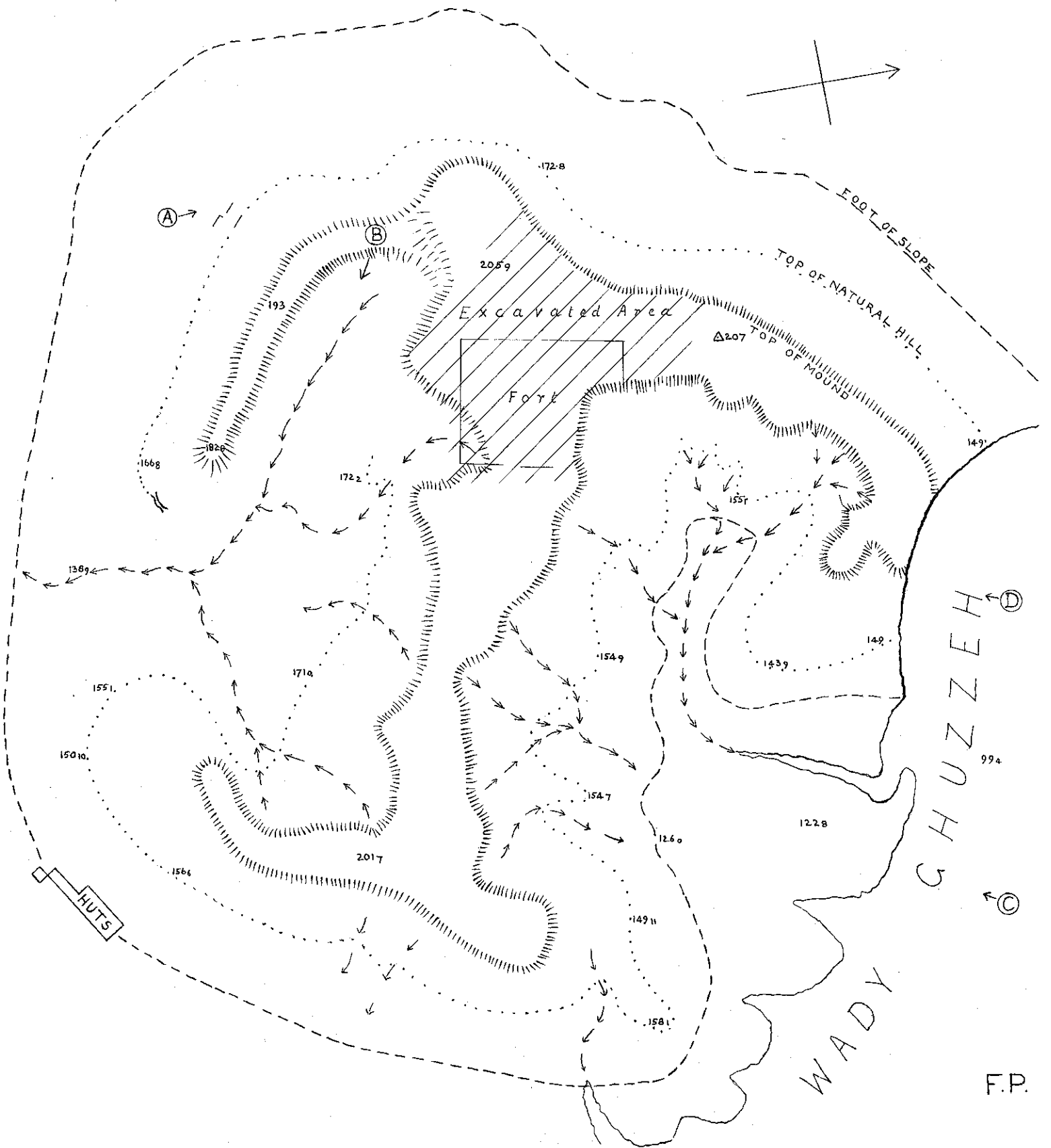
BEDAWY TENTS ON N.W. SIDE.



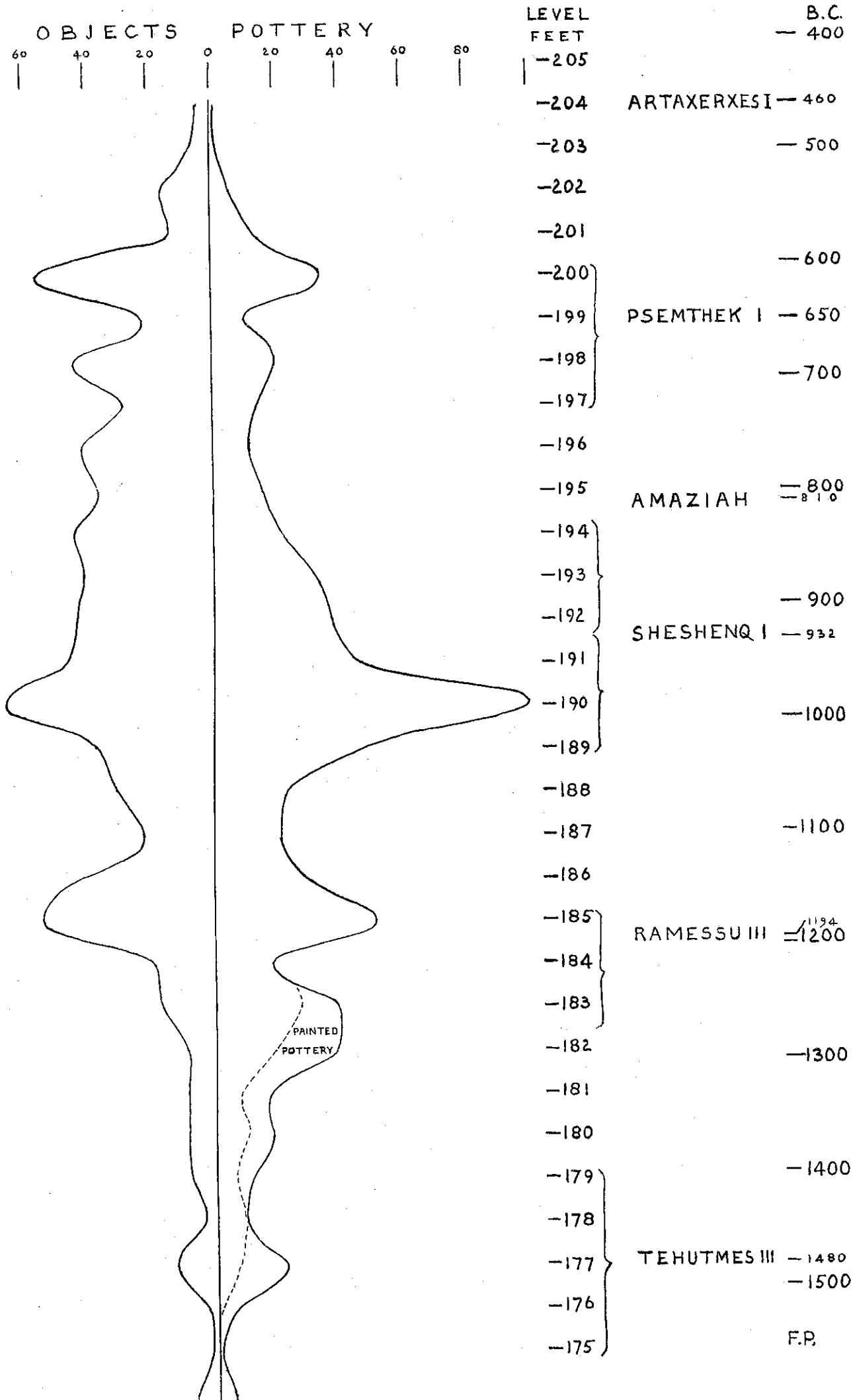
SECTION OF HILL AND TELL, N.E. SIDE. FROM D.

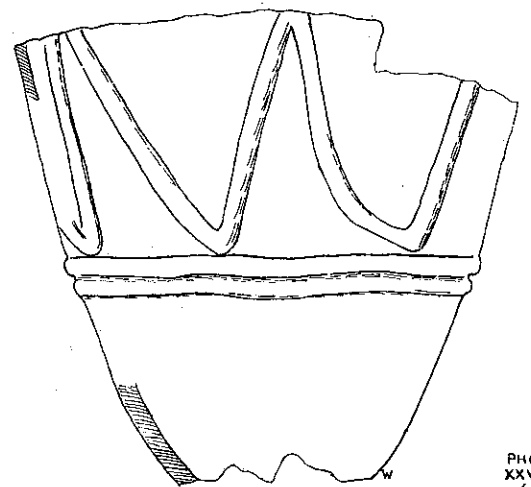
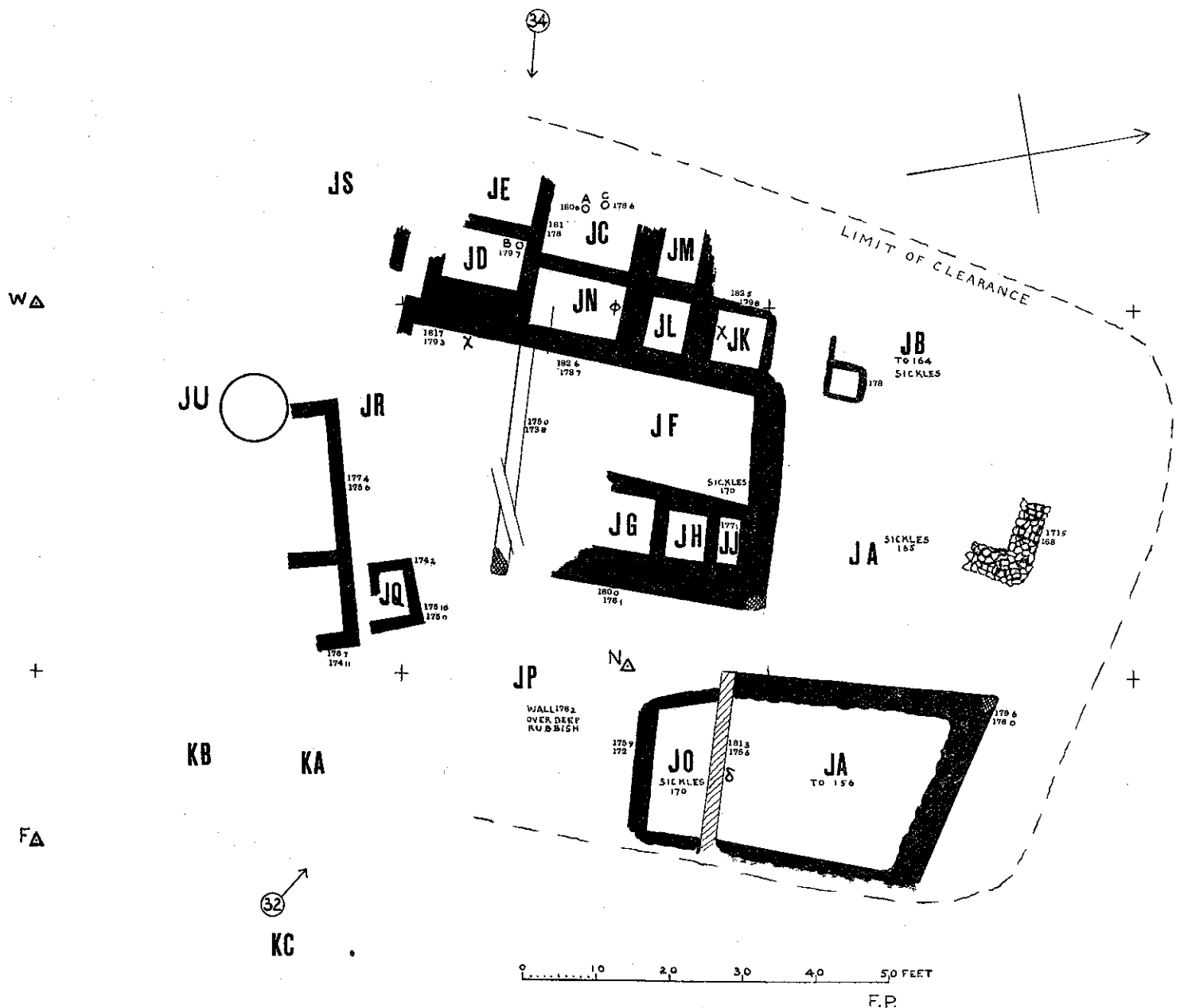


DENUDATION VALLEY ON S.W. SIDE. FROM B.

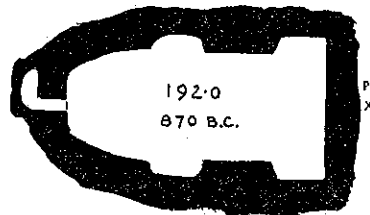
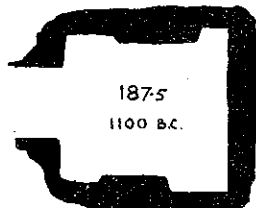
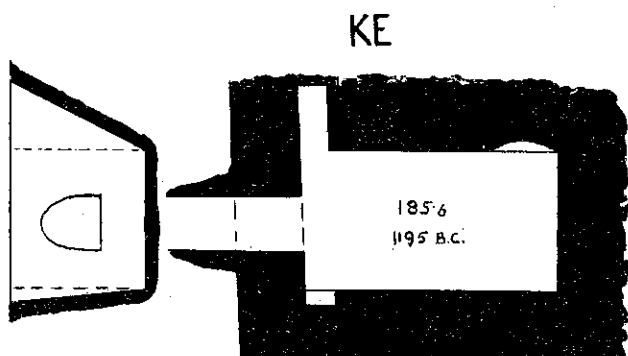


GERAR. DIAGRAM OF NUMBER OF OBJECTS IN EACH FOOT HEIGHT, AND SCALE OF DATES. V



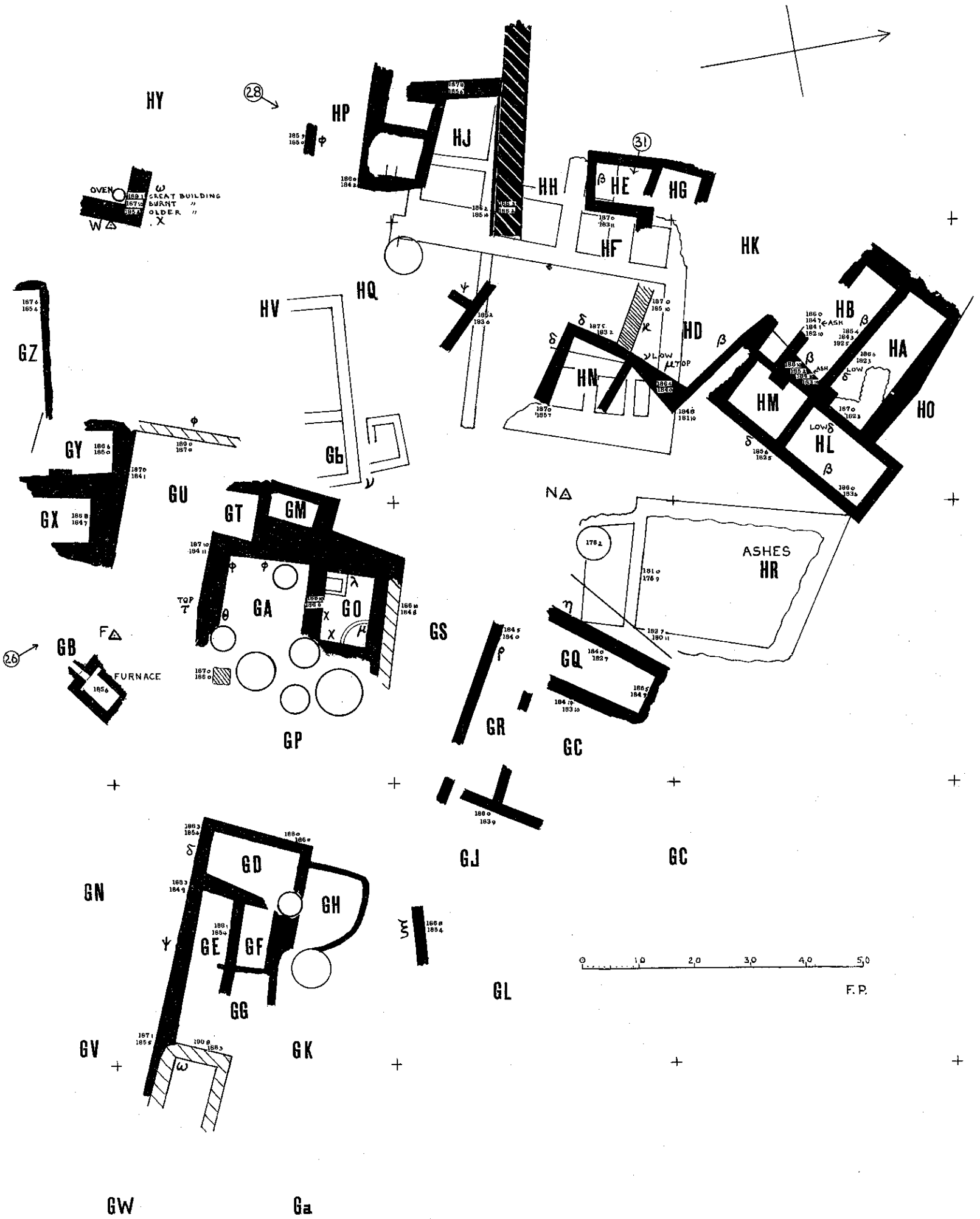


PHOT. XXV 6



PHOT. XXV 5

F.P.







1 FROM POINT 34.



2 IN TOWN OF XVIII<sup>TH</sup> DYNASTY, TEHUTMES III.

FROM POINT 32.



3 FROM POINT 31.



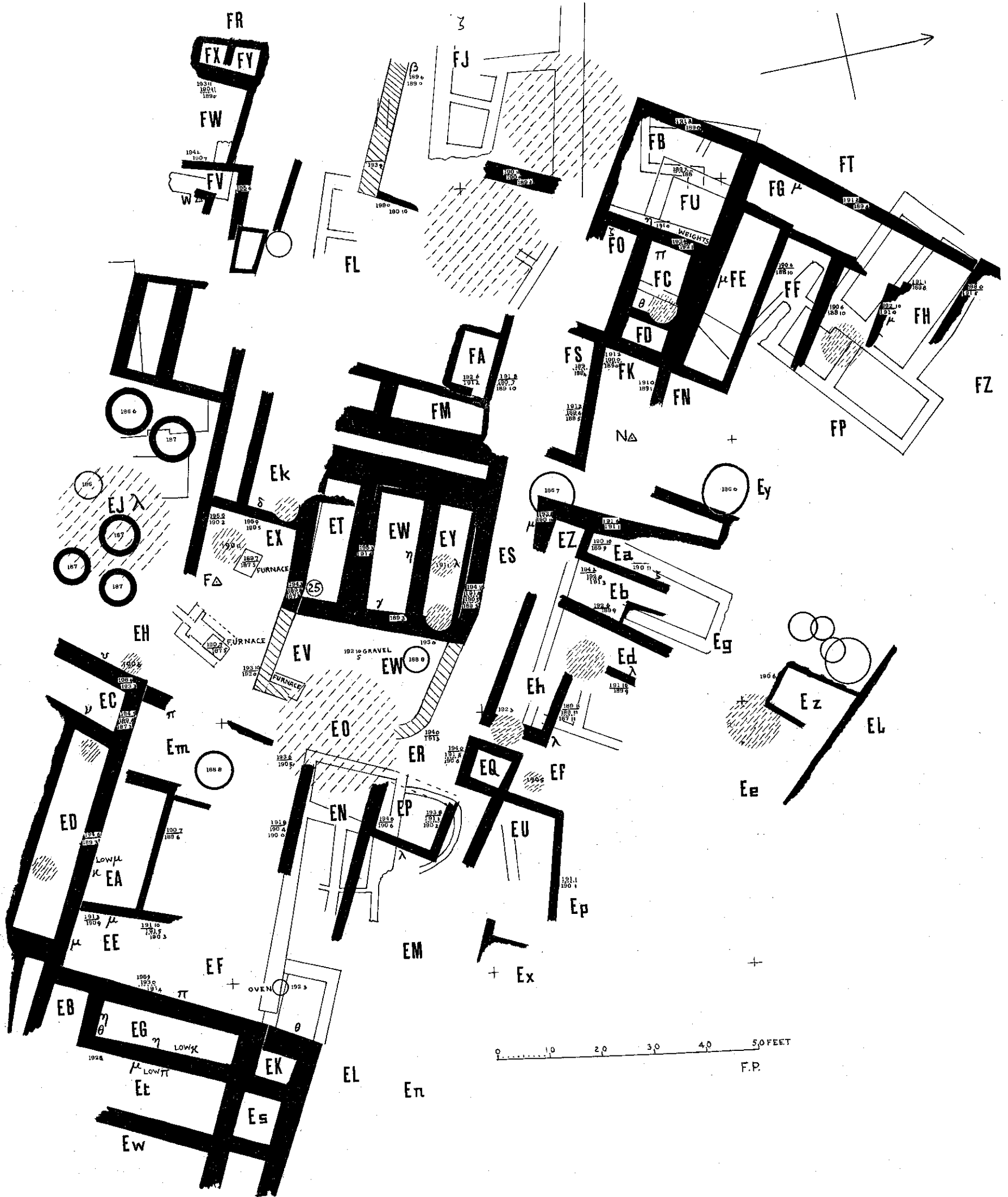
4 IN TOWN OF XX<sup>TH</sup> DYNASTY, RAMESSU III.

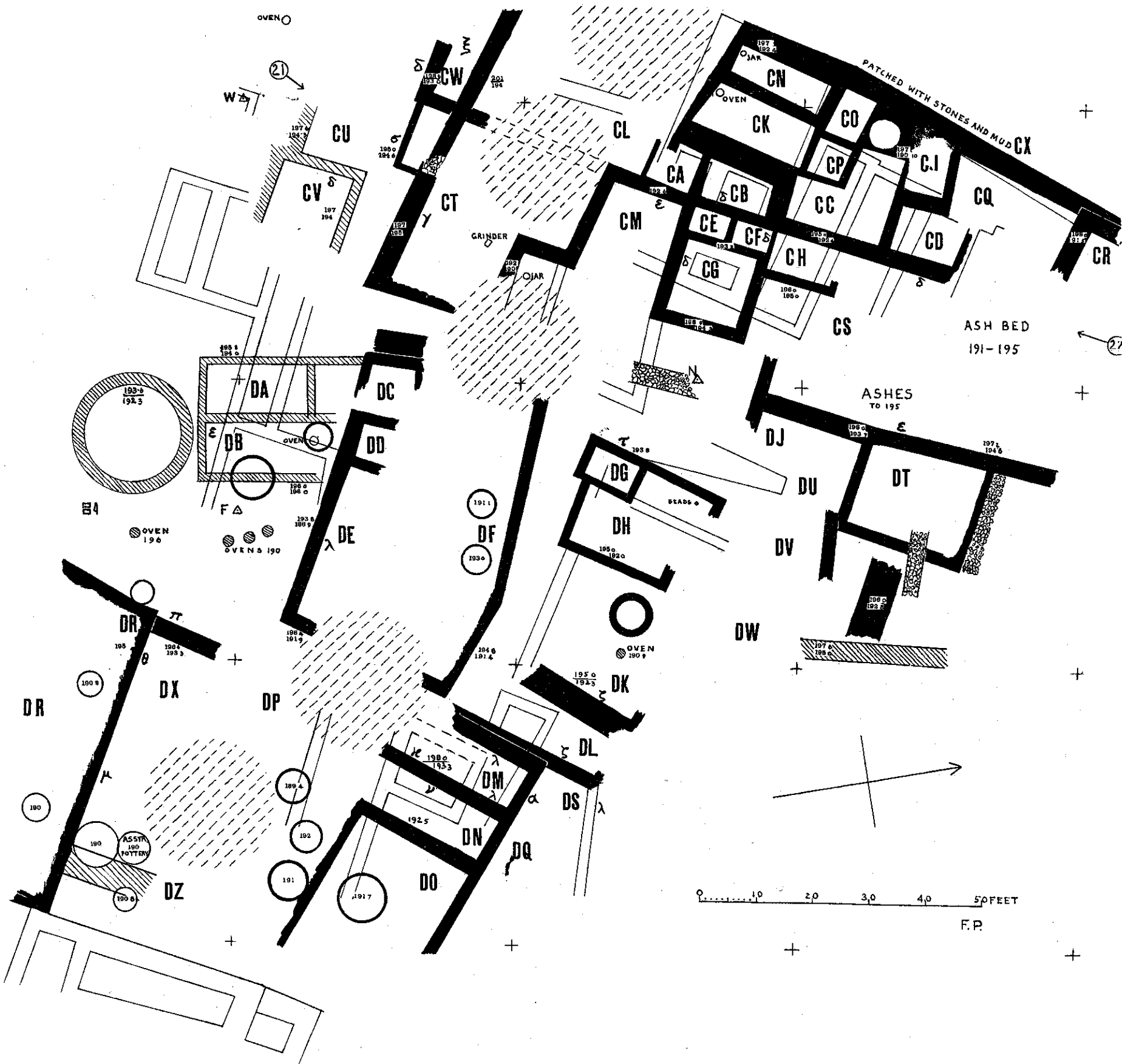
FROM POINT 28.

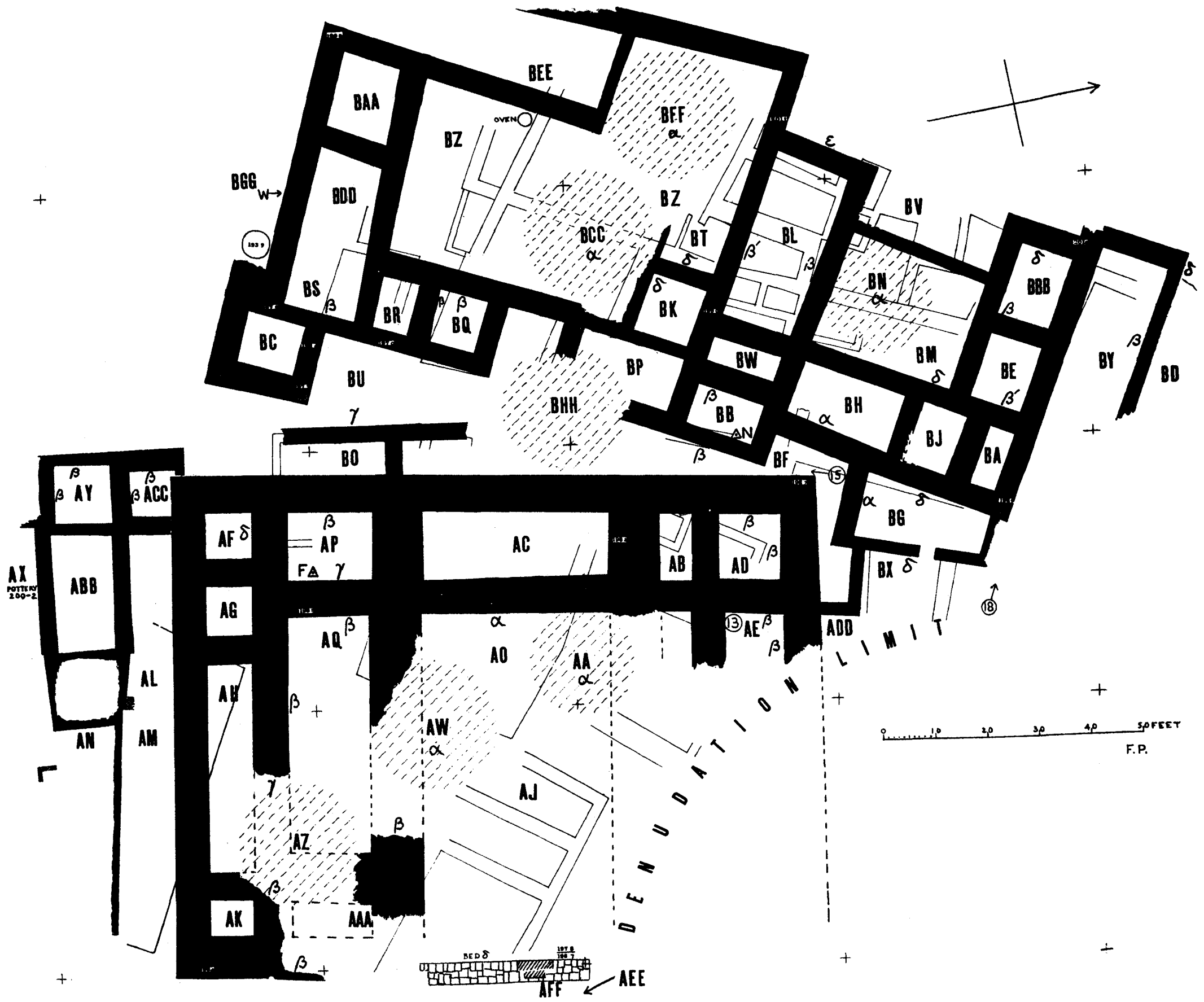


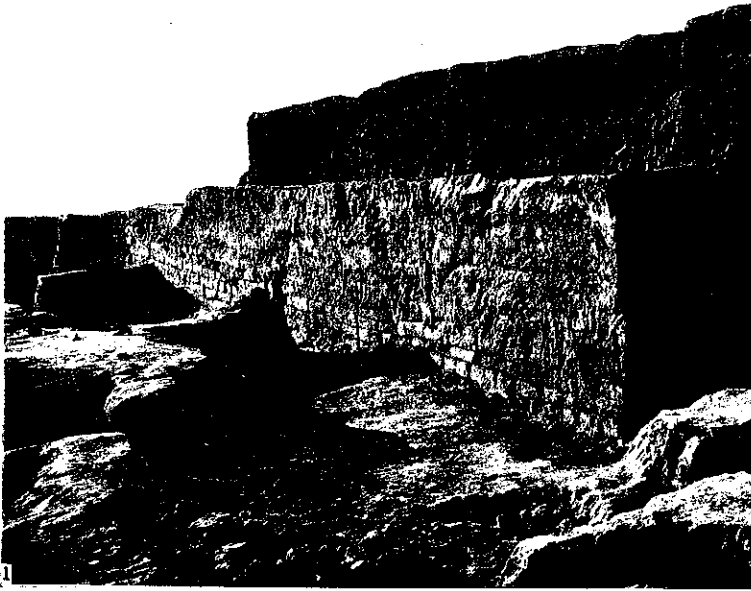
5 TOWN OF XX<sup>TH</sup> DYNASTY, FROM SOUTH.

FROM POINT 26.

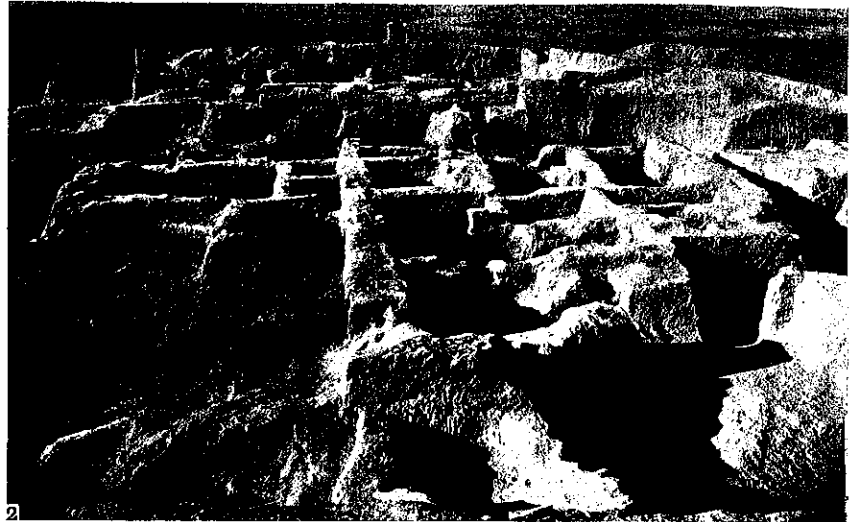








FROM POINT 25. WALL OF XXI<sup>ND</sup> DYNASTY, SHESHENO.



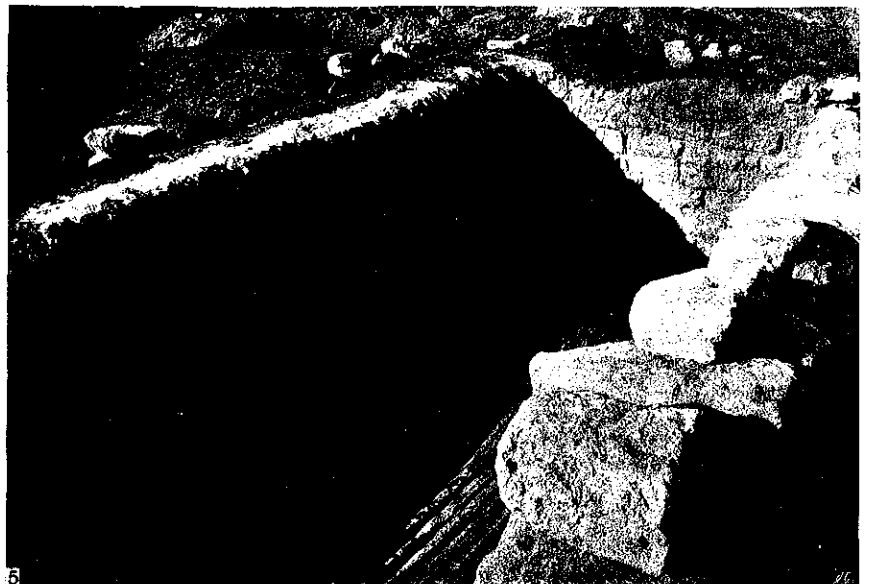
TOWN OF XXIII<sup>RD</sup> TO XXV<sup>TH</sup> DYNASTIES. AMAZIAH. FROM POINT 22.



TOWN OF XXIII<sup>RD</sup> TO XXV<sup>TH</sup> DYNASTIES. AMAZIAH. FROM POINT 21.

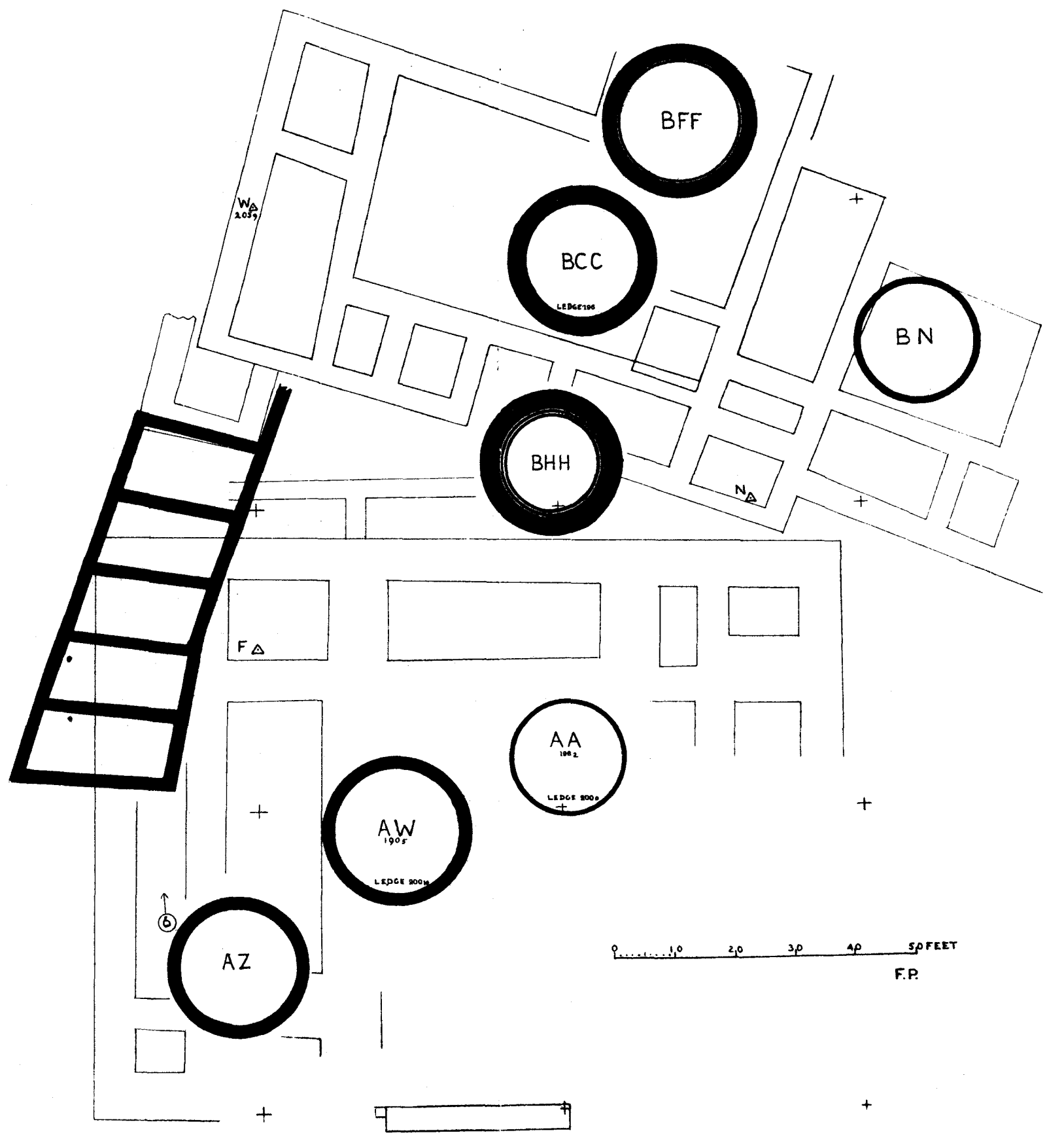
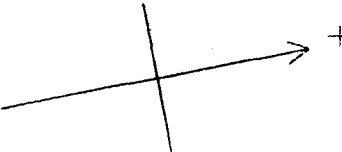
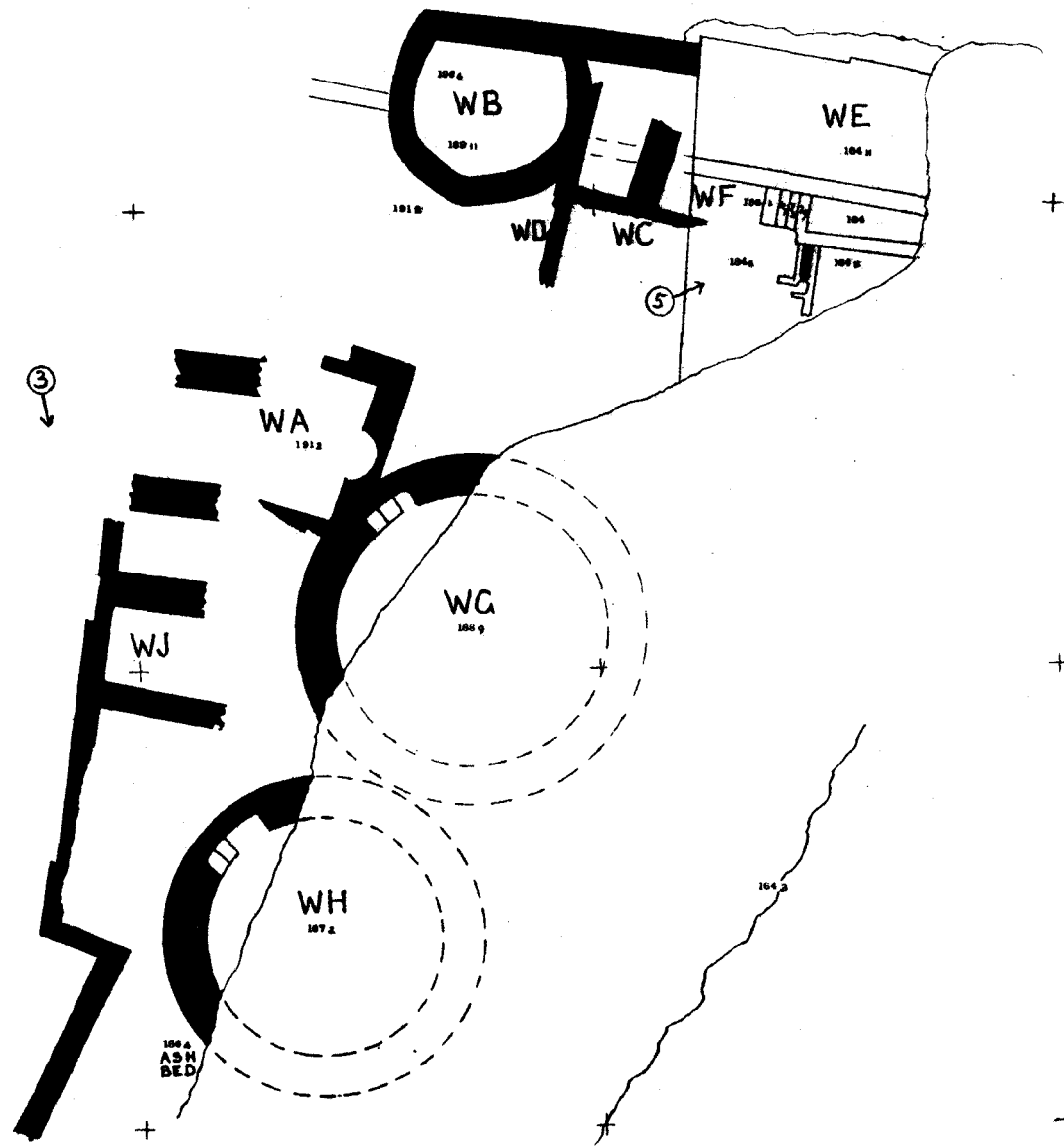
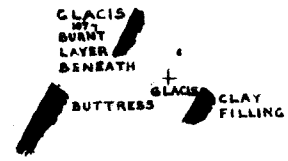


FROM POINT 15.

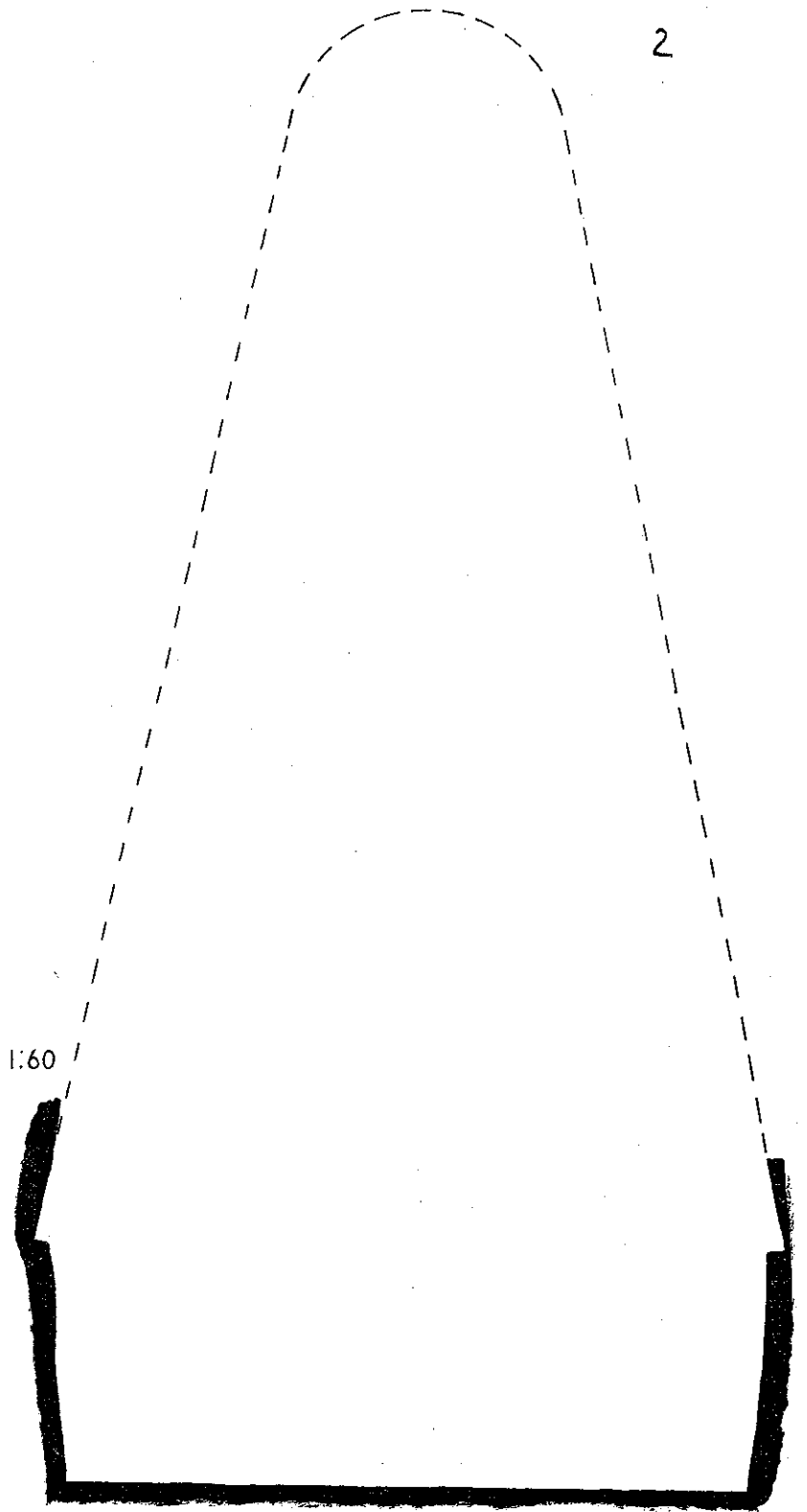


FROM POINT 13.

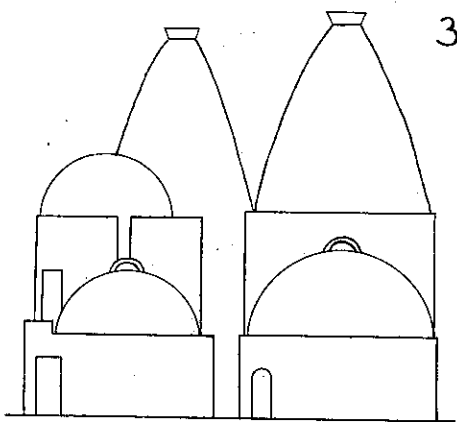
IN TOWN OF XXVI<sup>TH</sup> DYNASTY, PSAMTEK.



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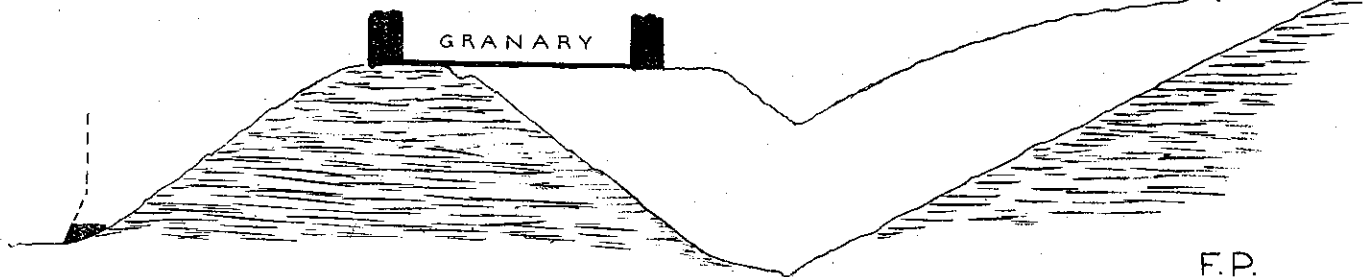


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3

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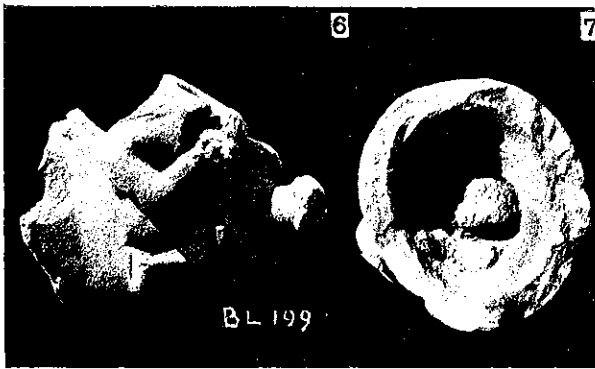
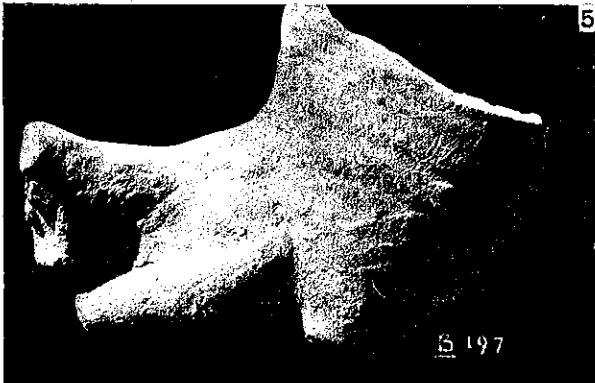


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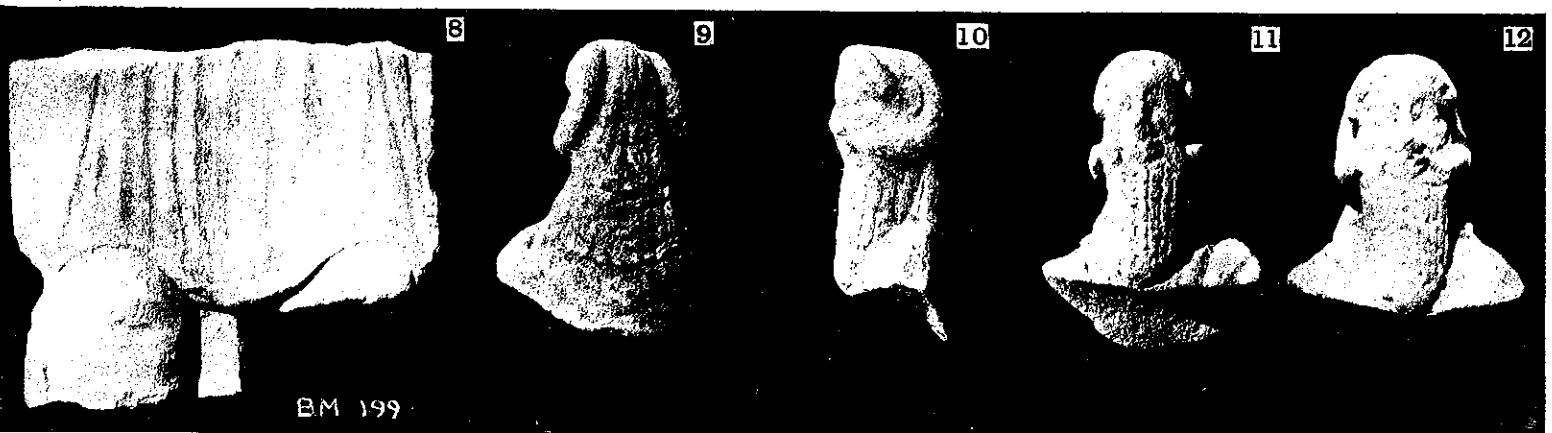
F.P.



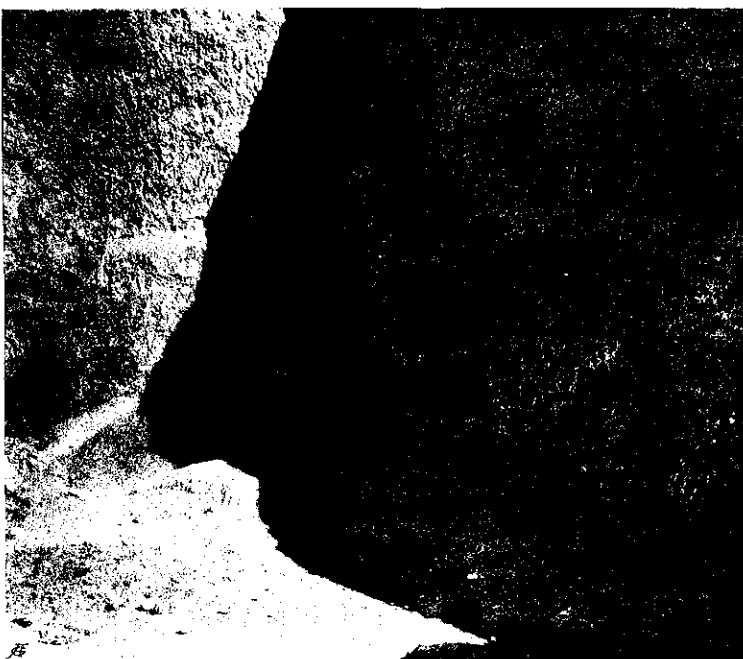
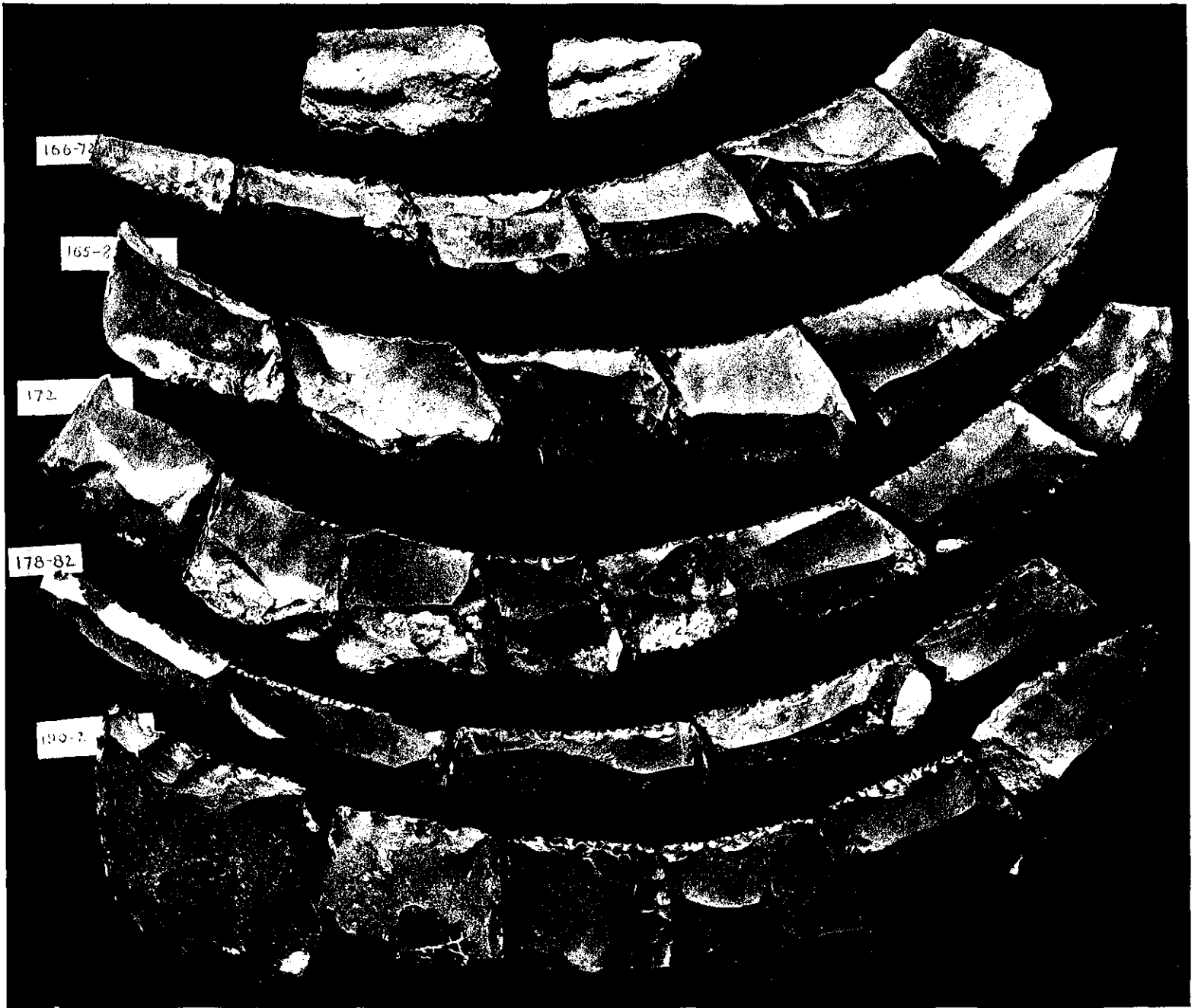
PERSIAN STORE ROOMS. FROM POINT 6. PL. XIII.

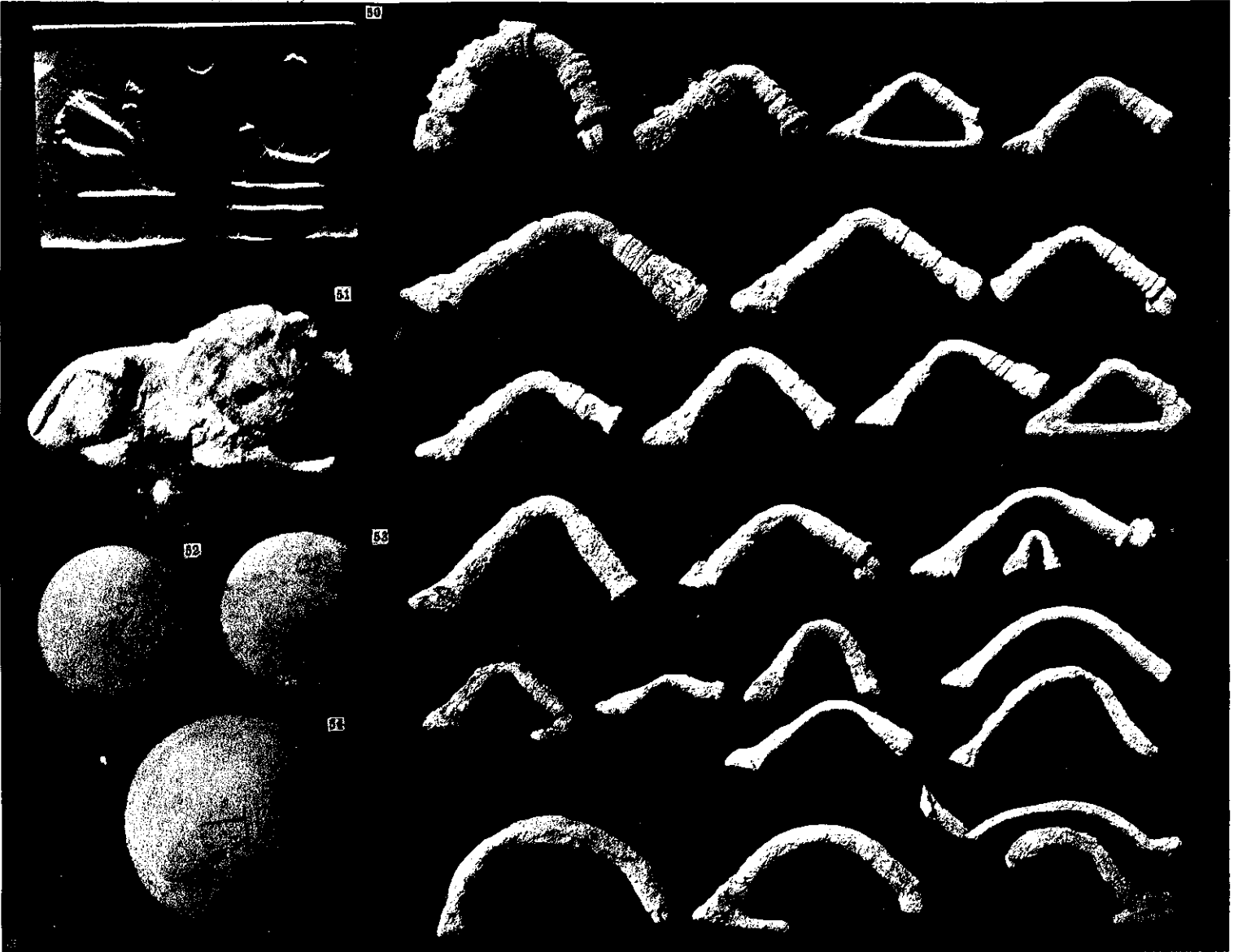
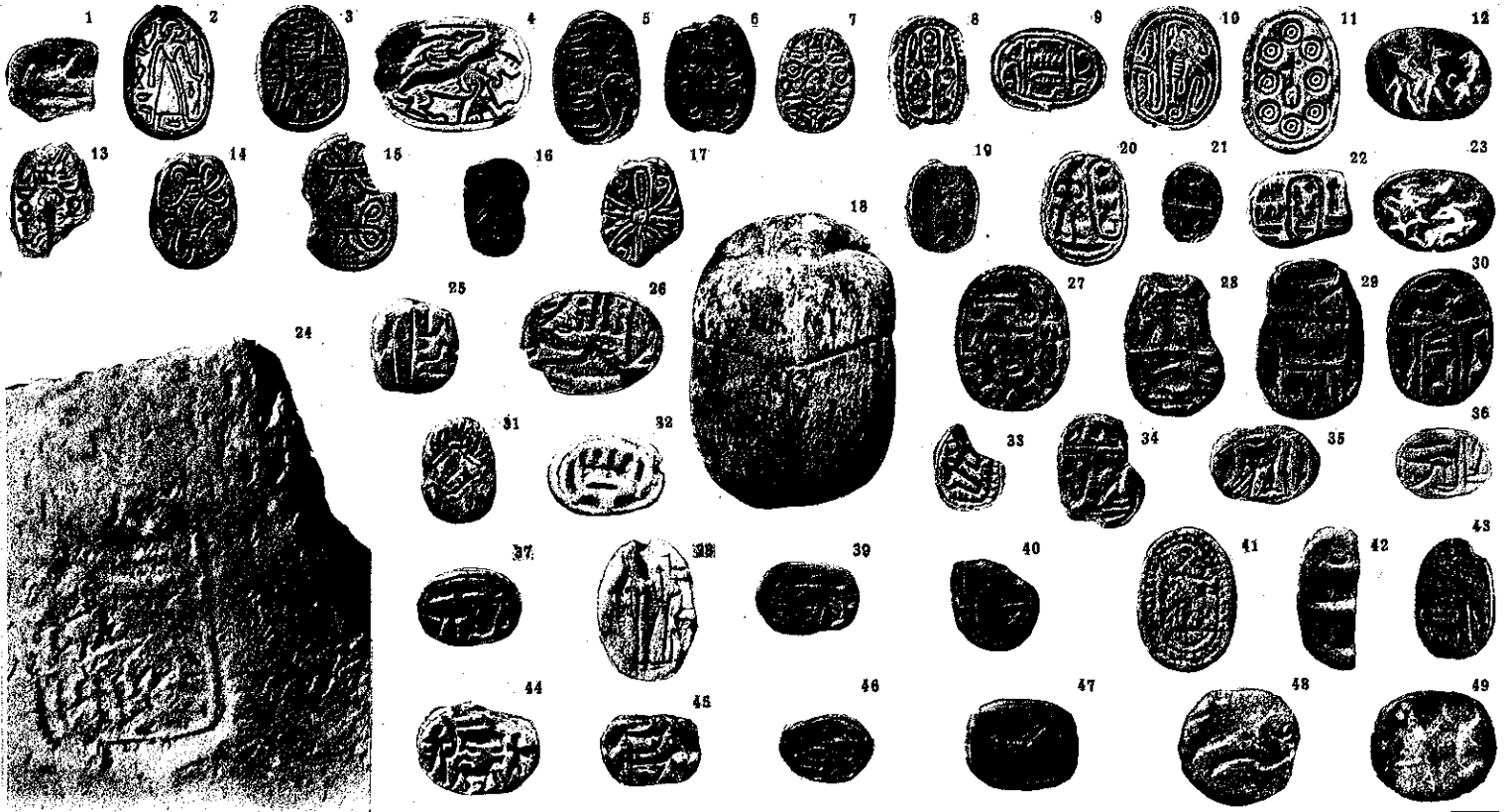


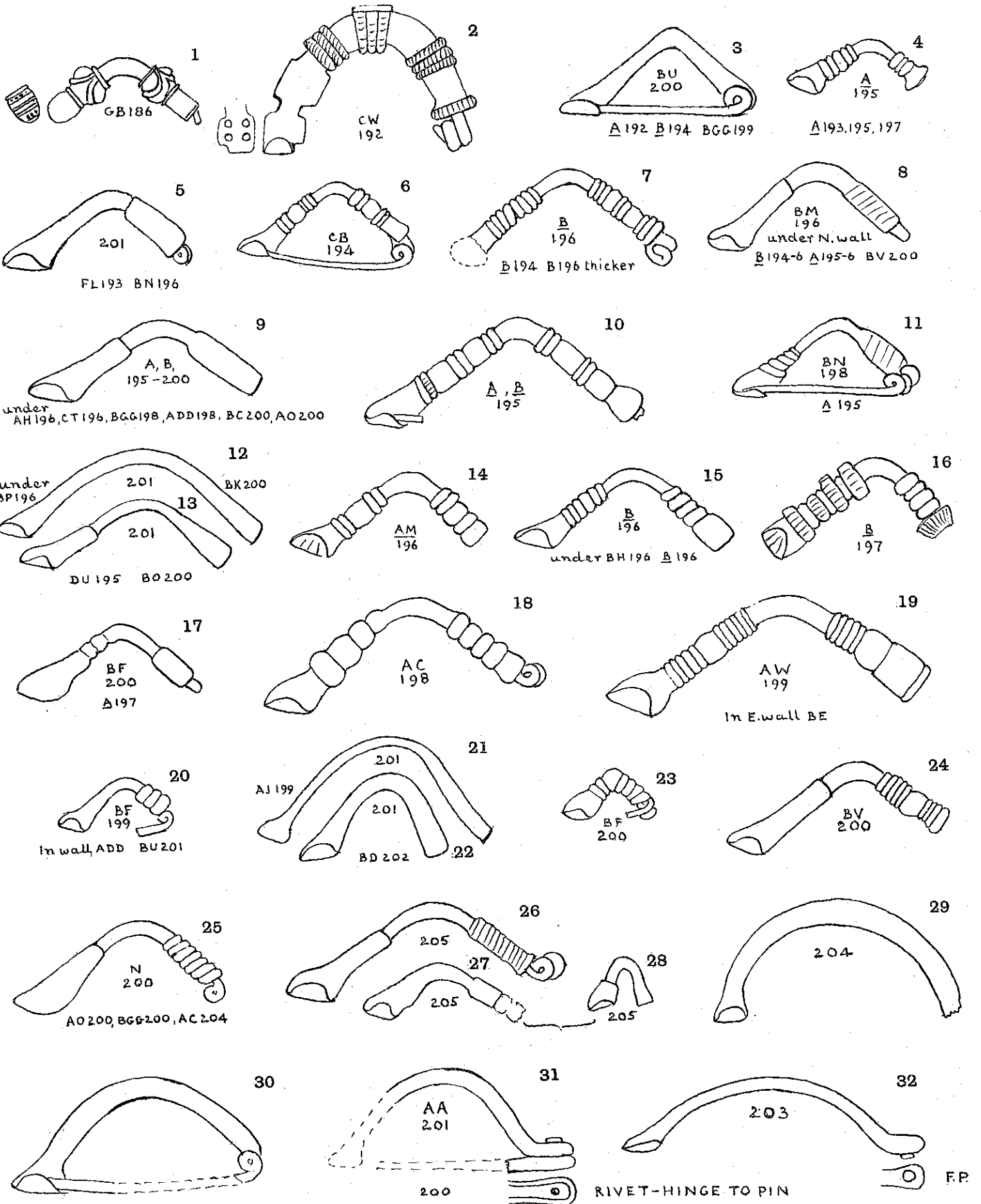
HIGH CORNER OF BA ON PL. XI, WITH. ROOM SOUTH OF IT. POINT 18.



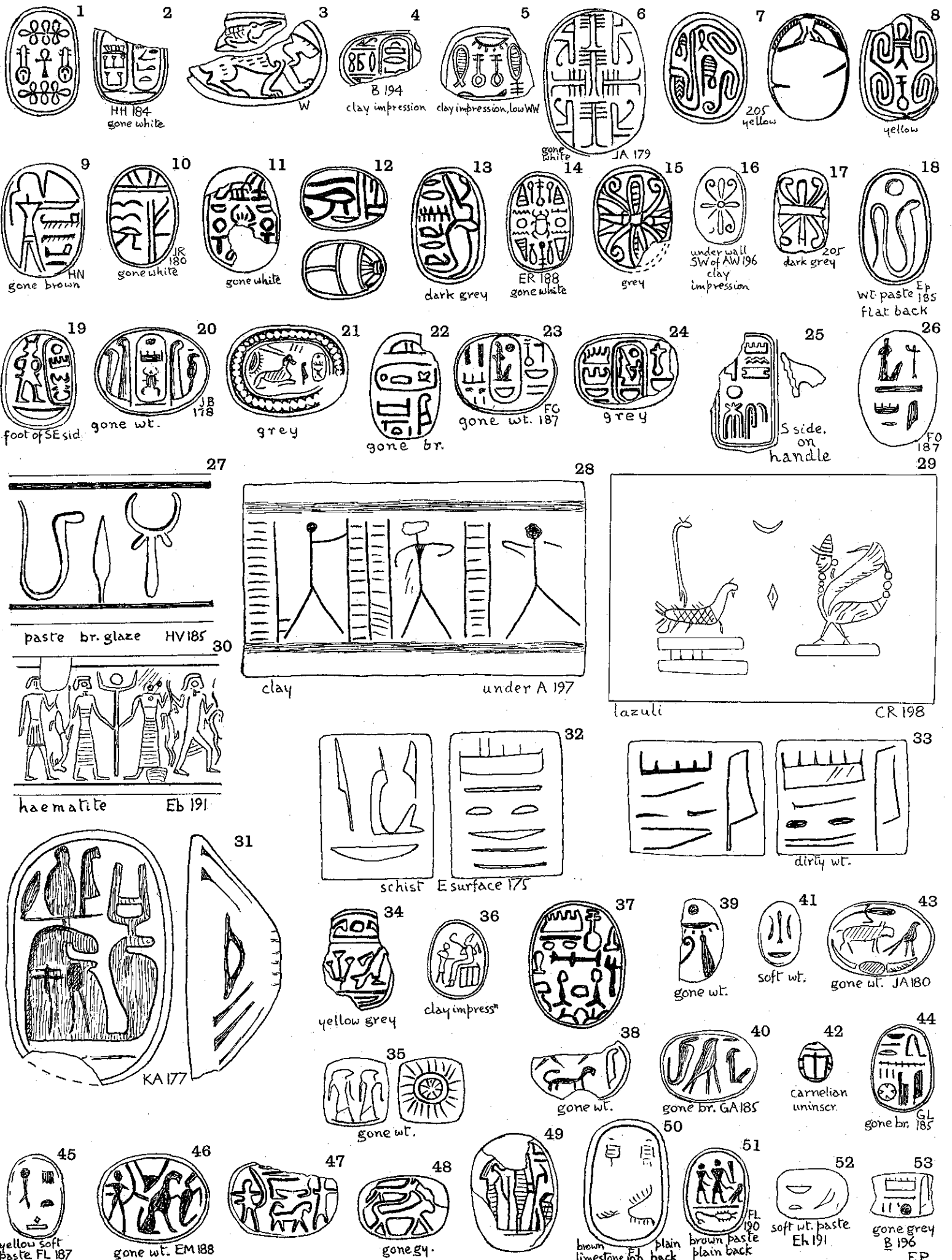




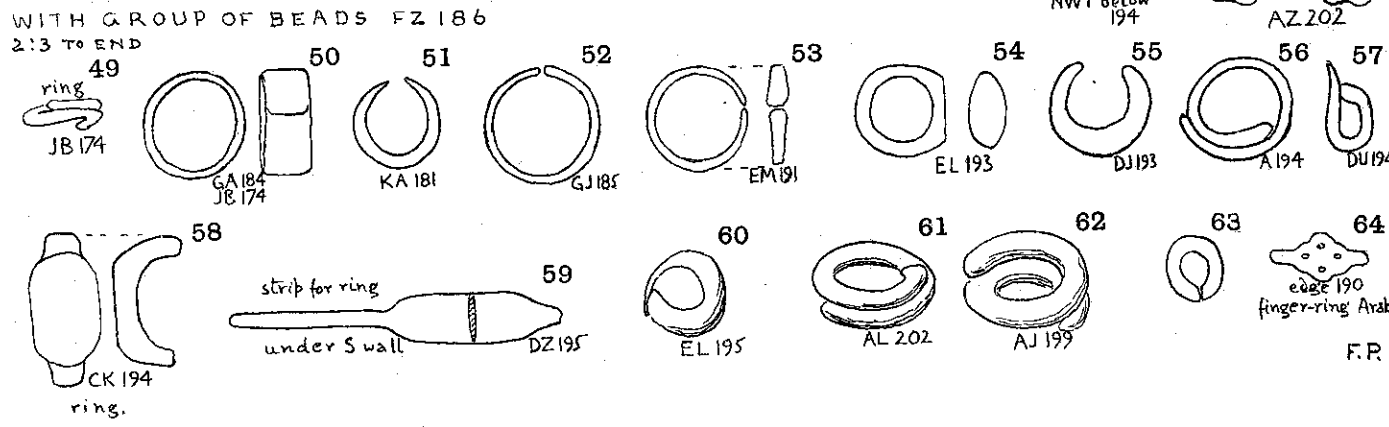
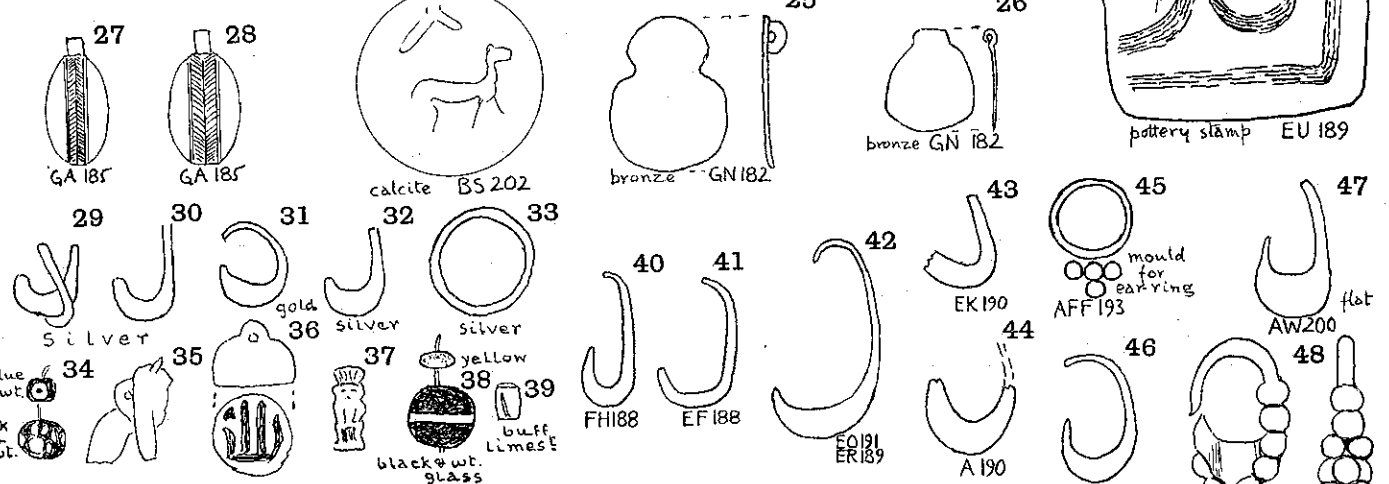
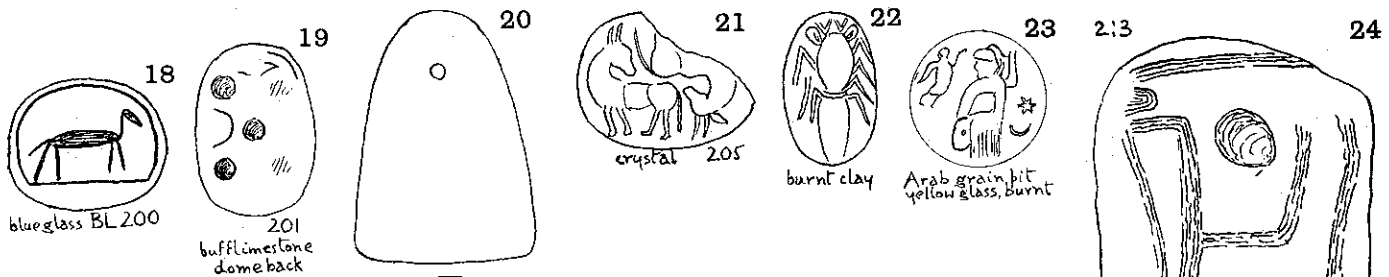
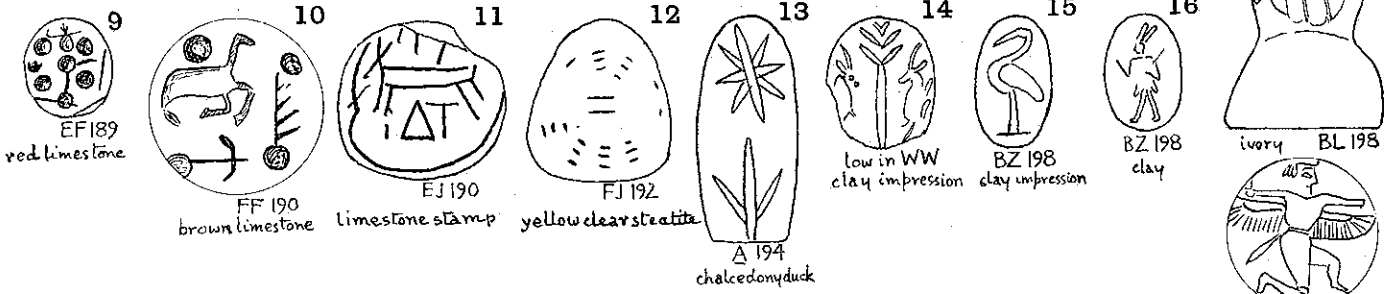
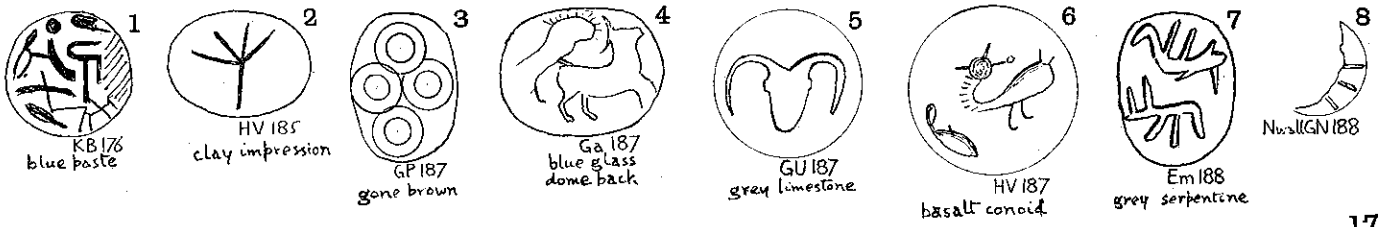




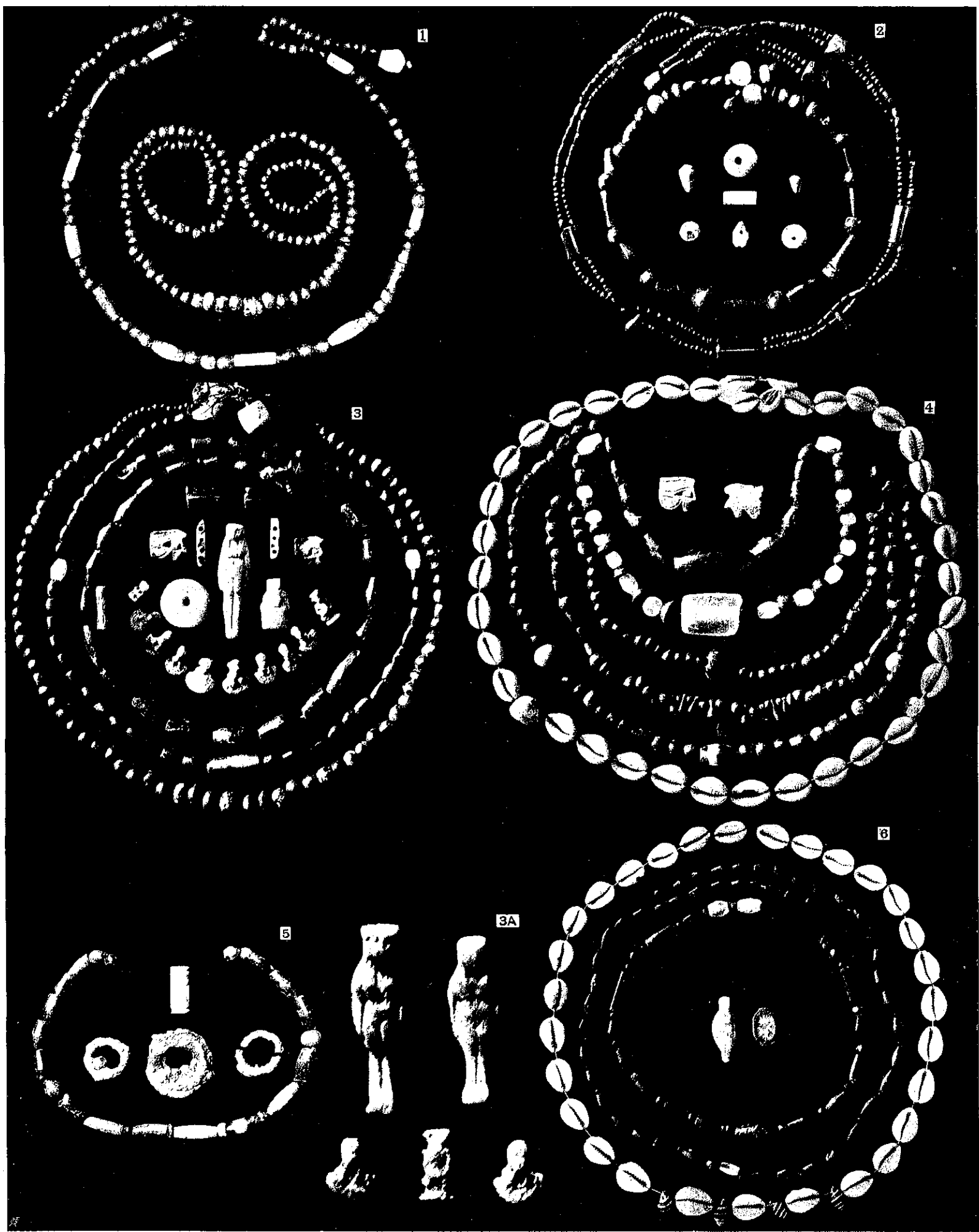
APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.

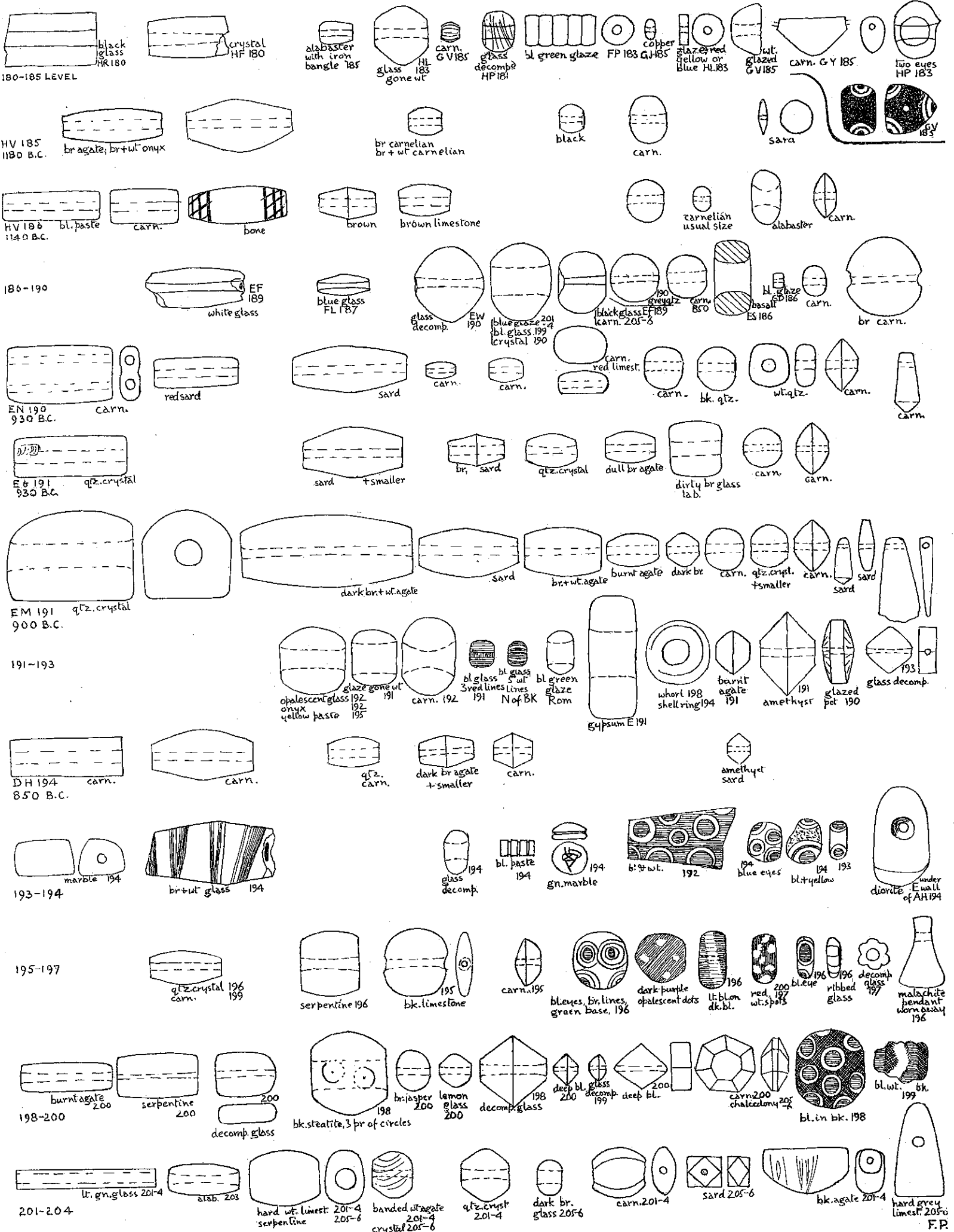


APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200 : 190, 950; 194, 800 : 199, 650; 204, 450 D.C.



APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.





APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.

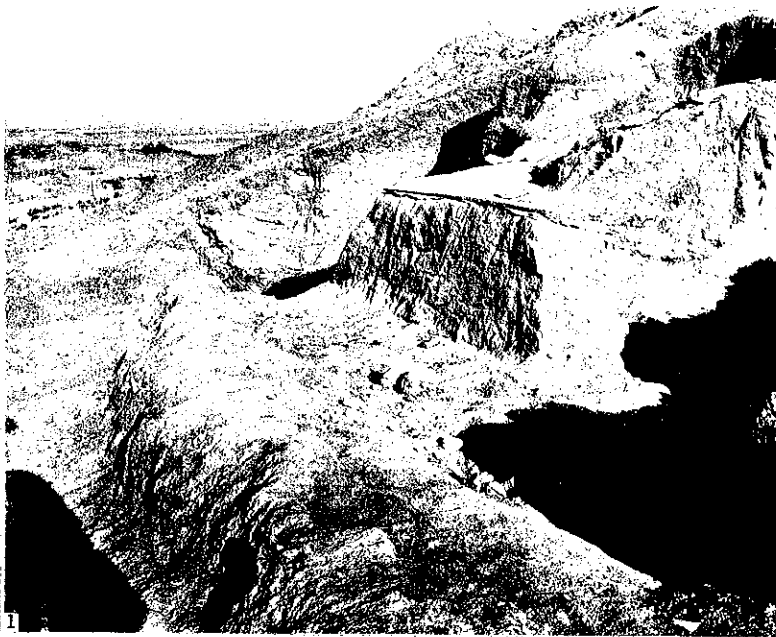
F.P.



APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.







1 BASE OF GLACIS ON WEST SIDE. POINT A.



2 GRANARY AND WALLS. S.W. SIDE. FROM POINT 3.



3 FROM POINT 5.



4 SWORD FURNACES.

ON S.W. SIDE.

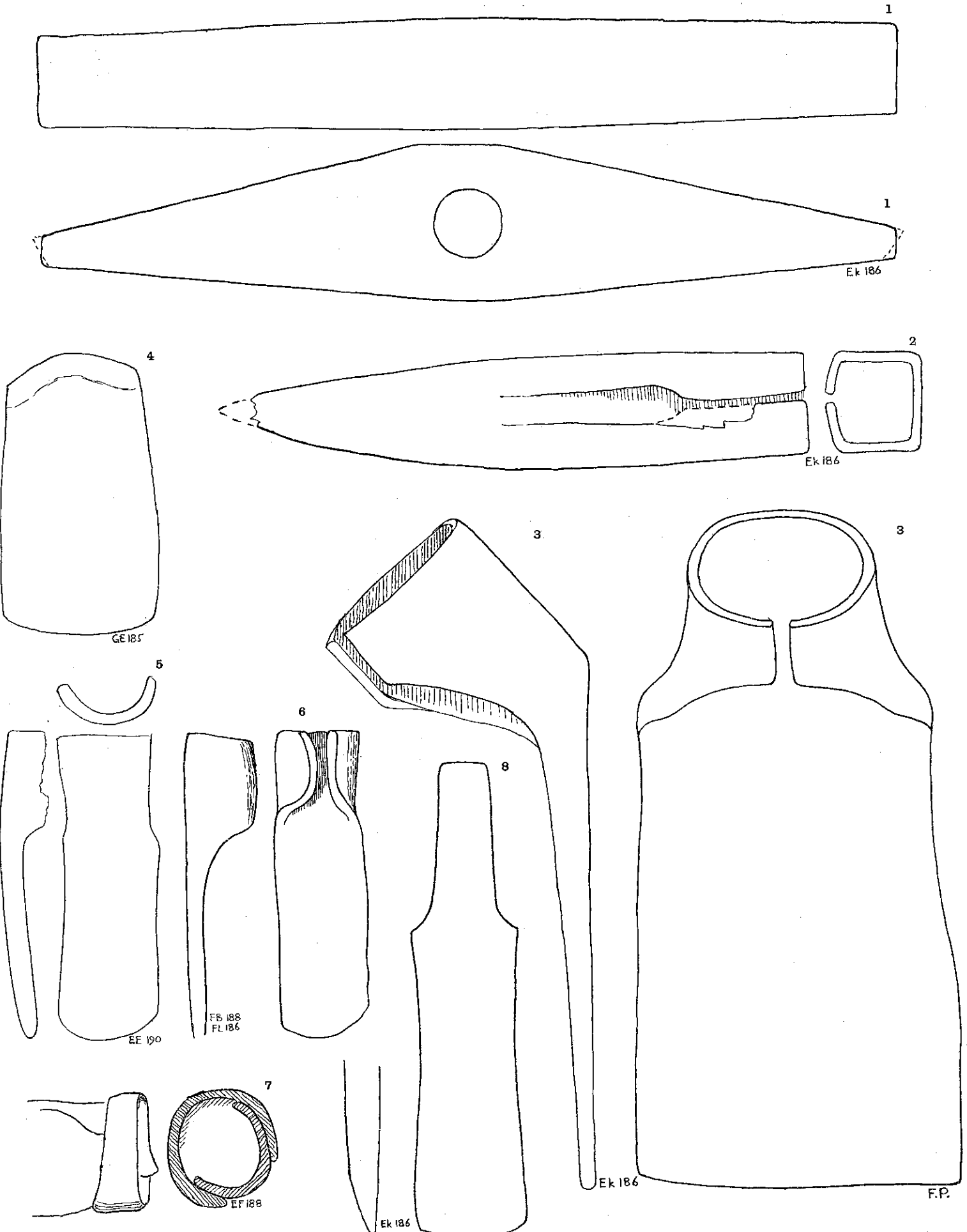


5 FROM EAST.

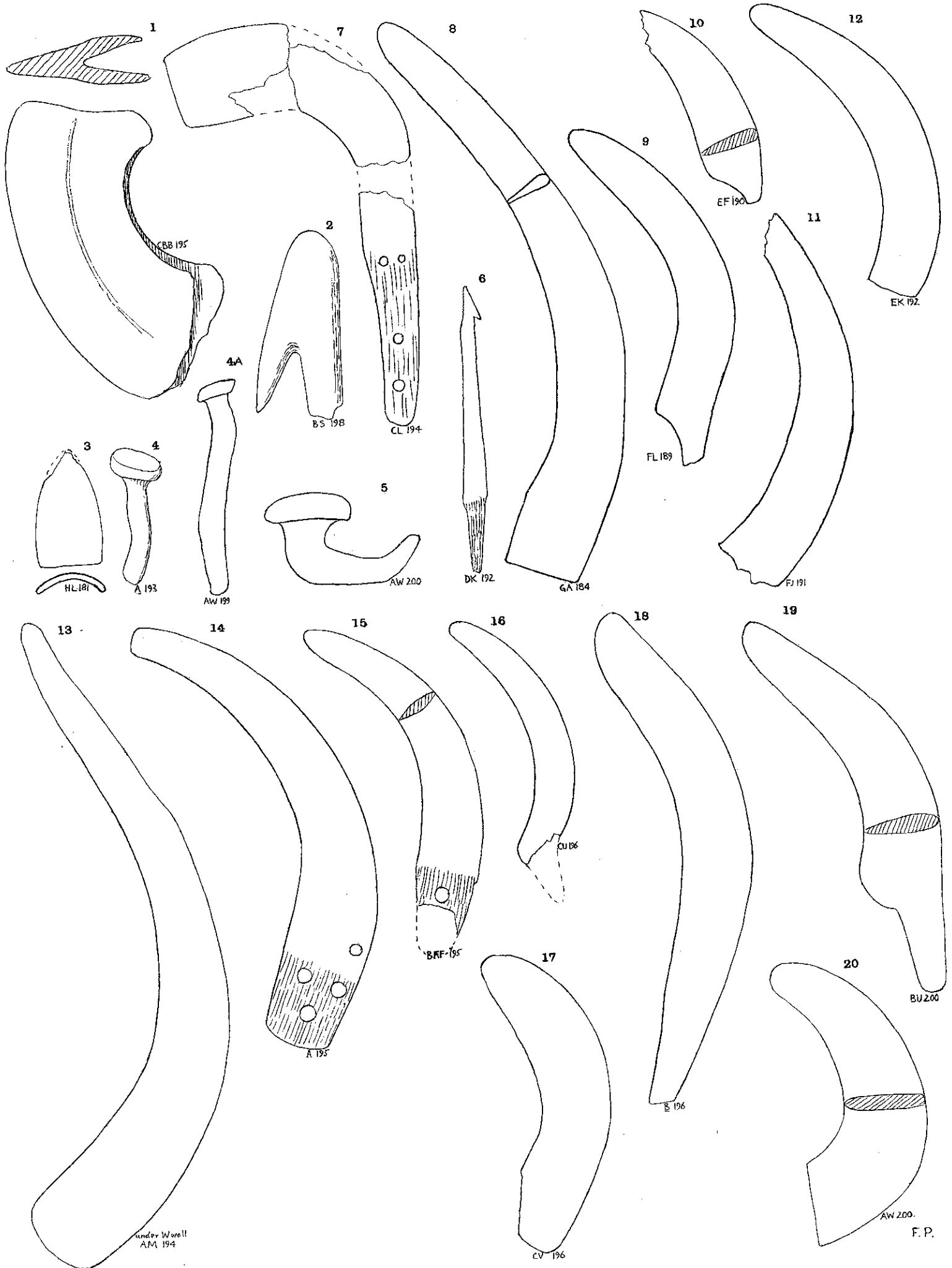


6 LARGE IRON FURNACE 192°0, 870 B.C.

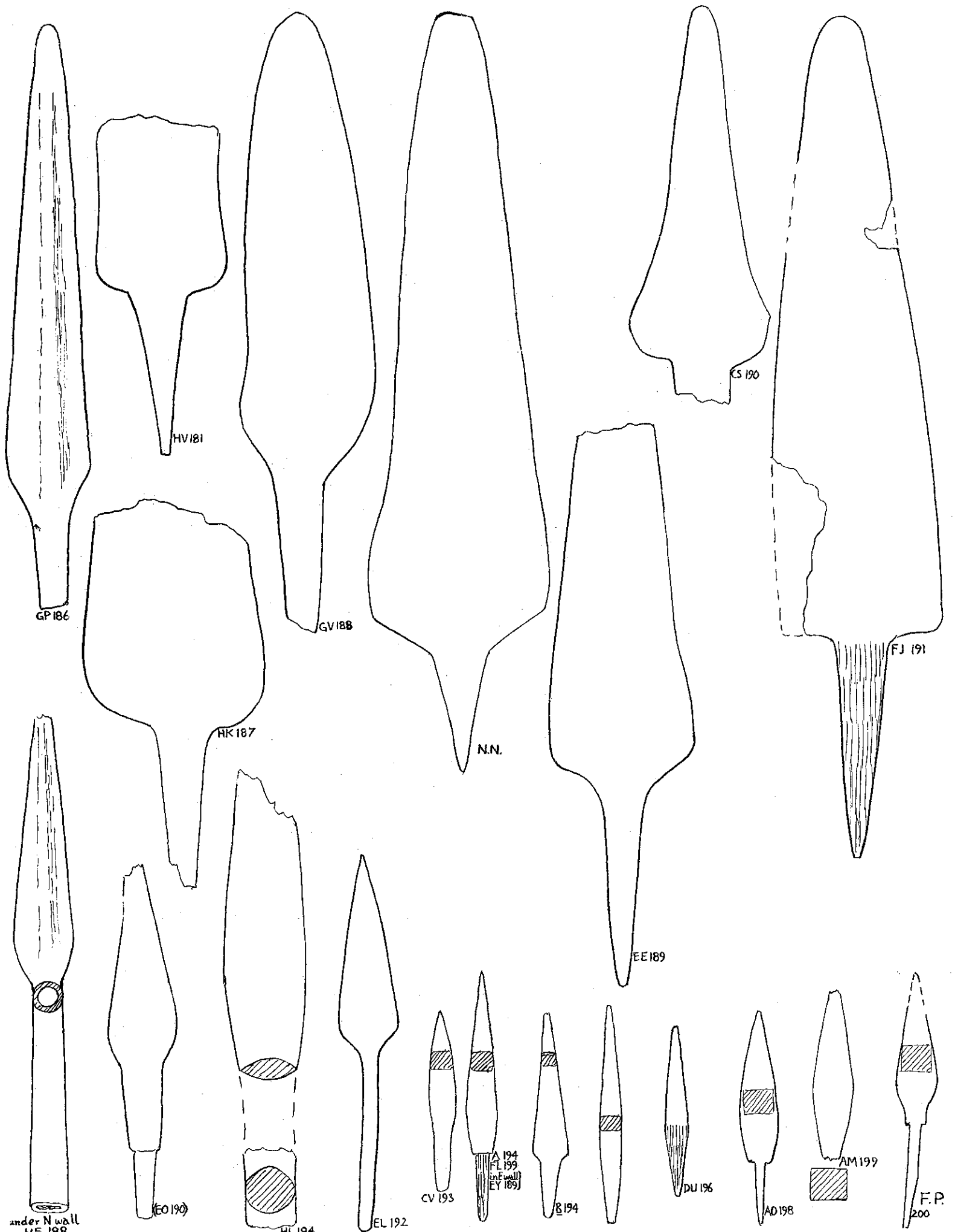
FROM NORTH.



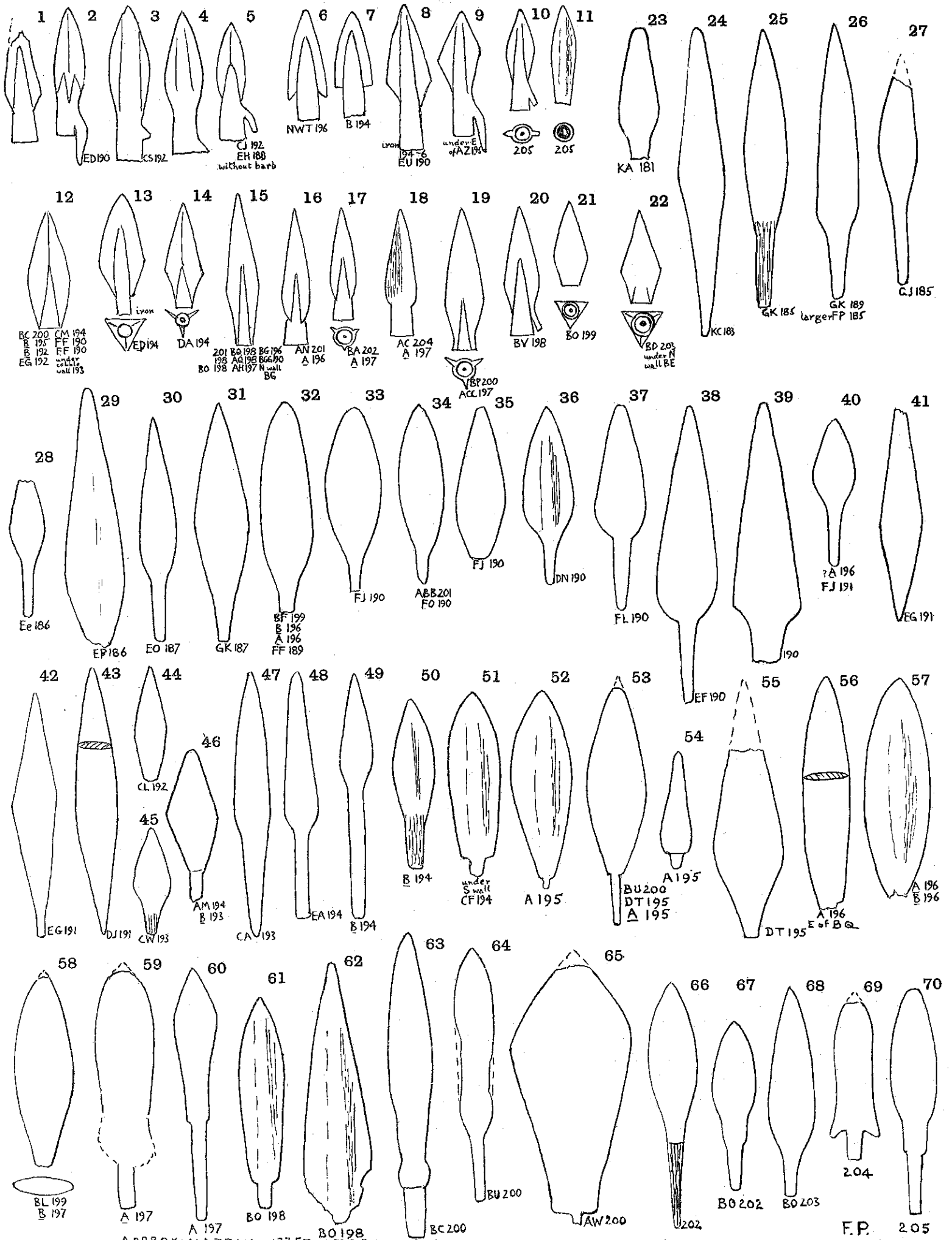
APPROXIMATELY 177 FT= 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.



APPROXIMATELY 177 FT= 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.

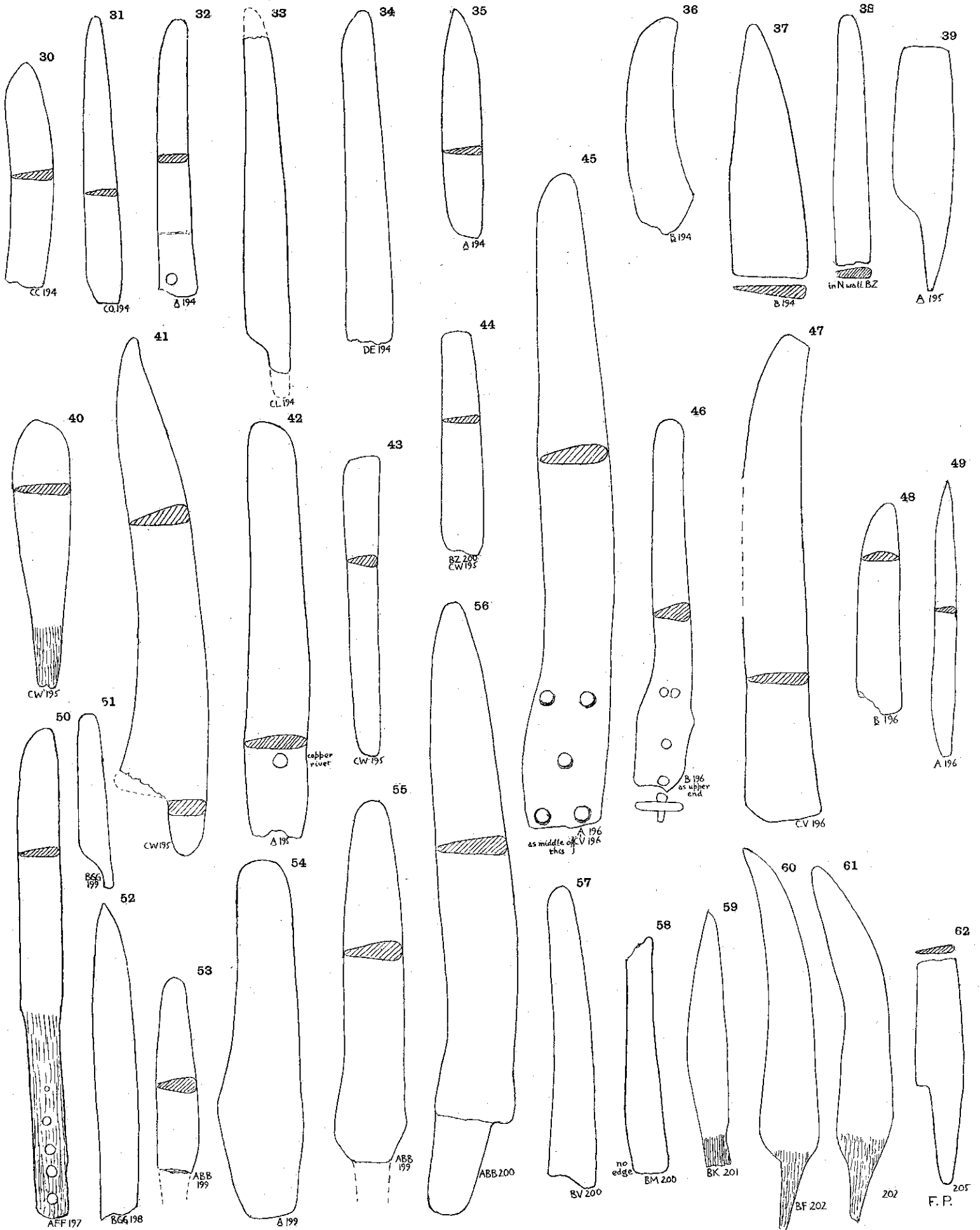


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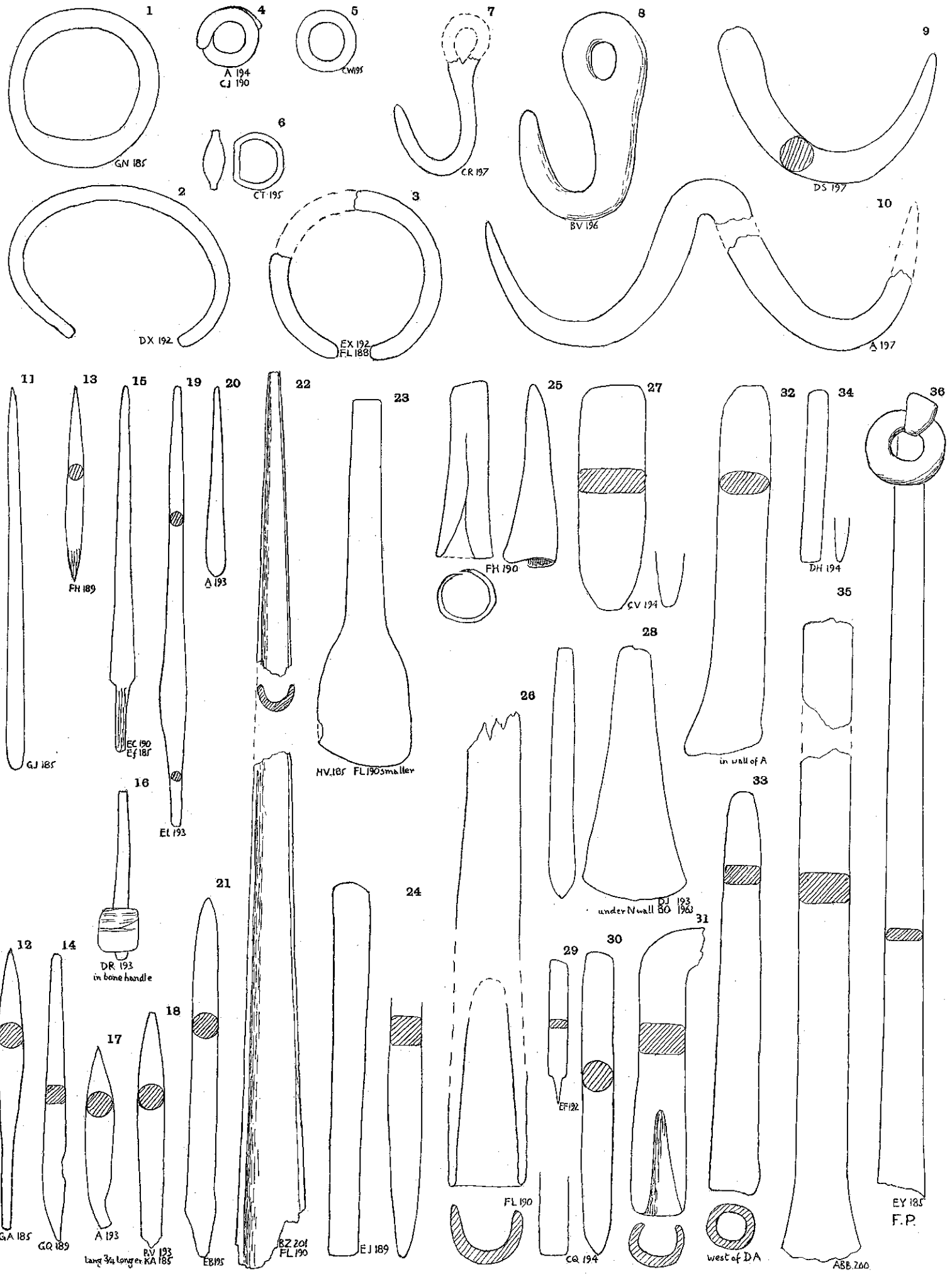
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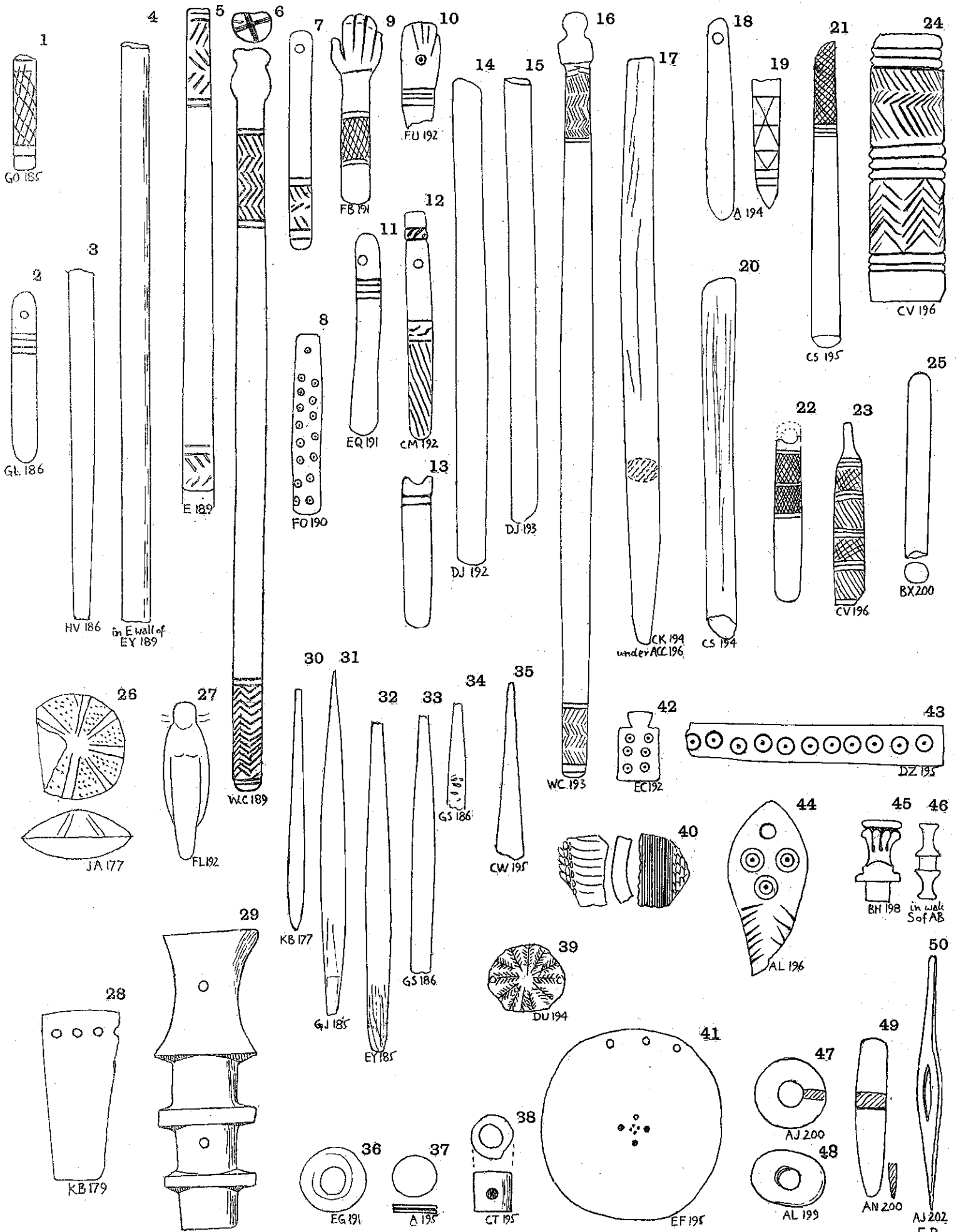




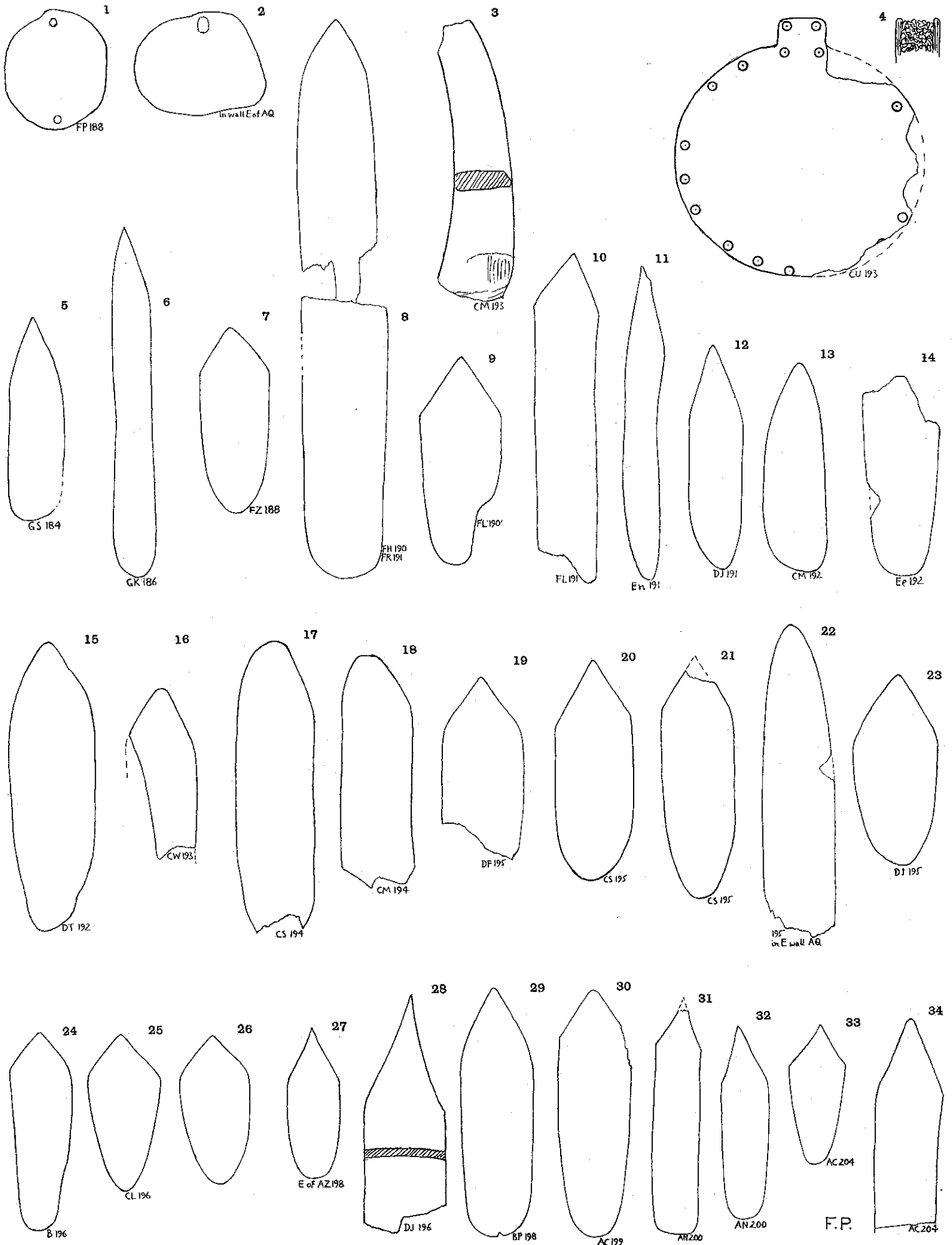
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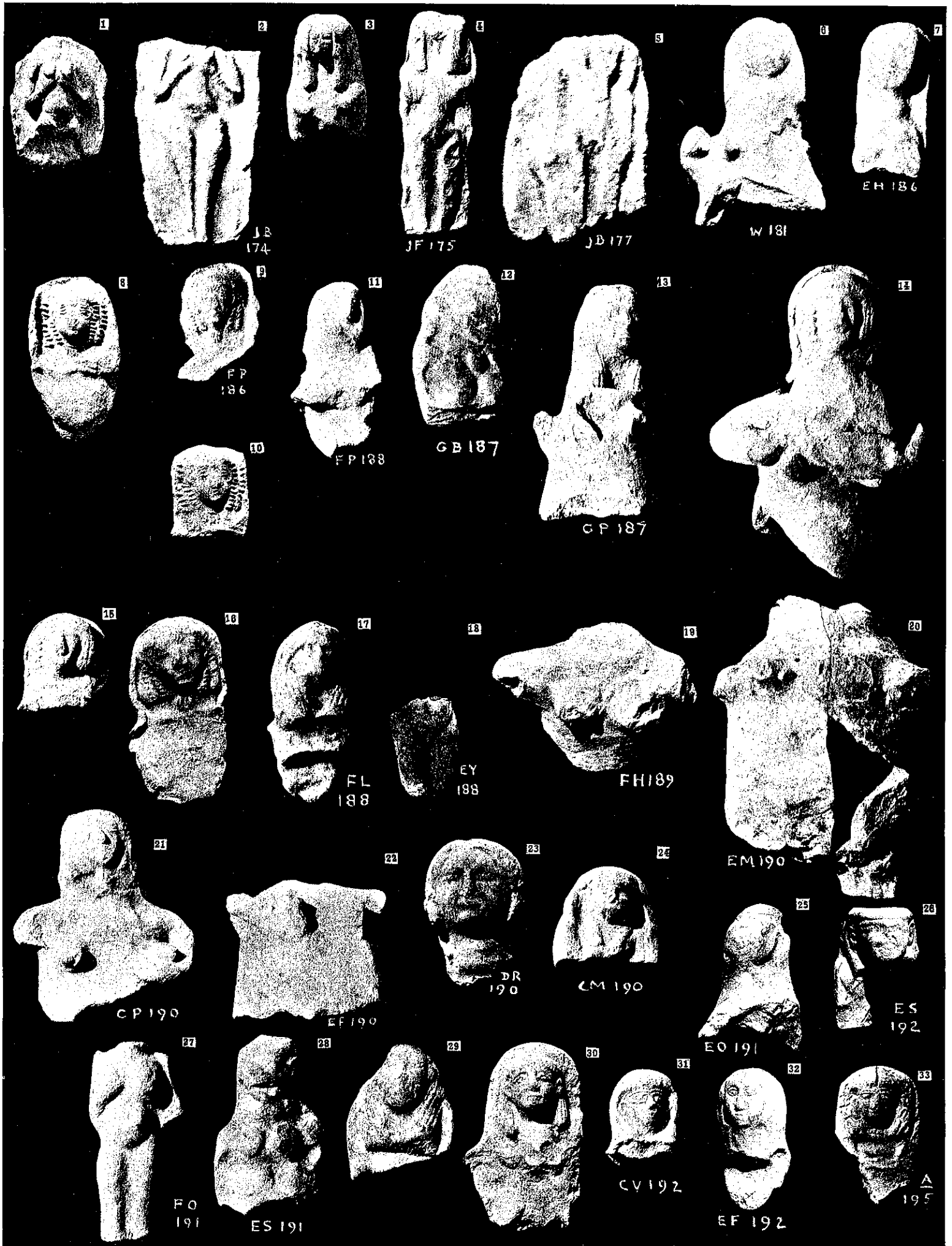


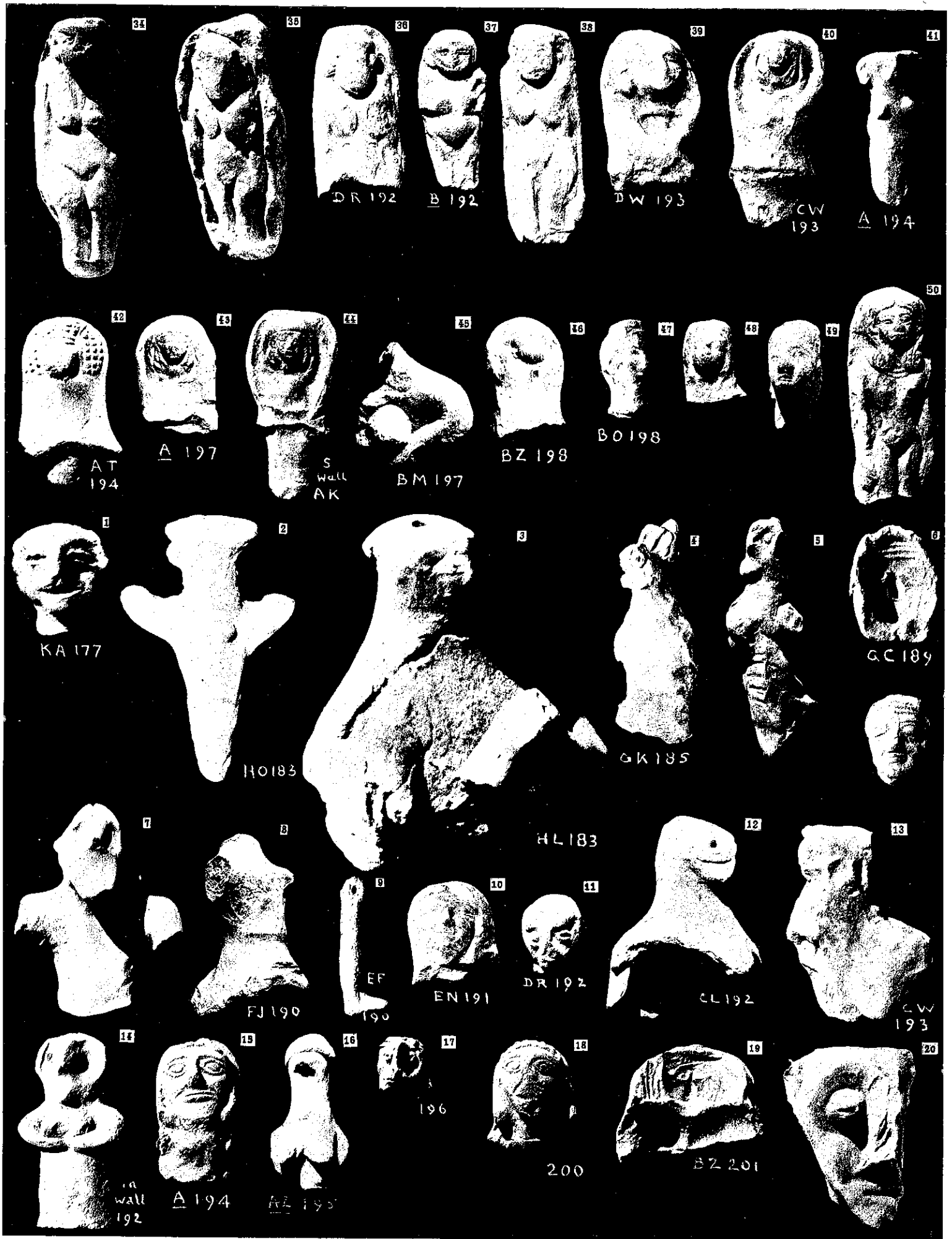


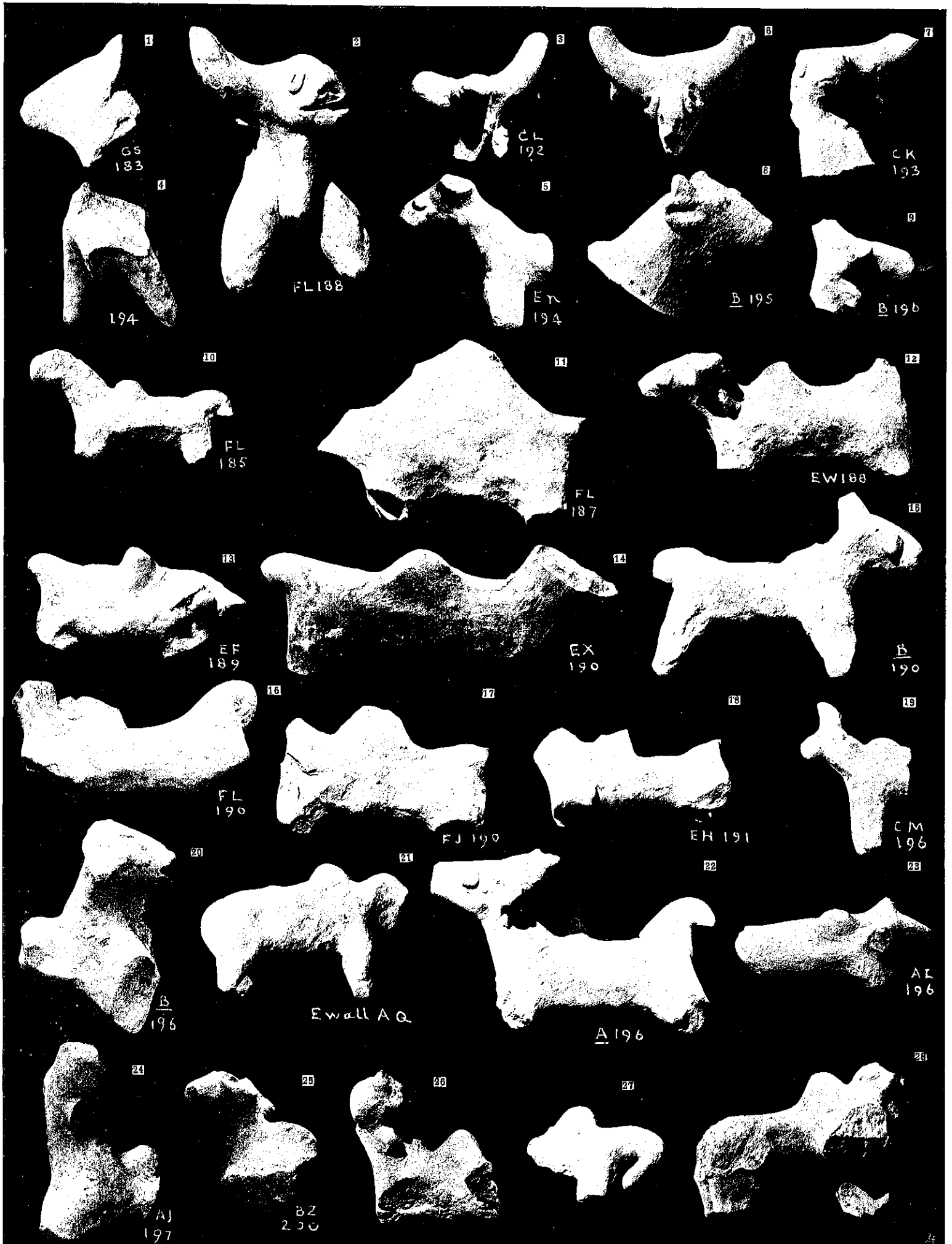
APPROXIMATELY 177 FT = 1500 B.C.; 185, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.

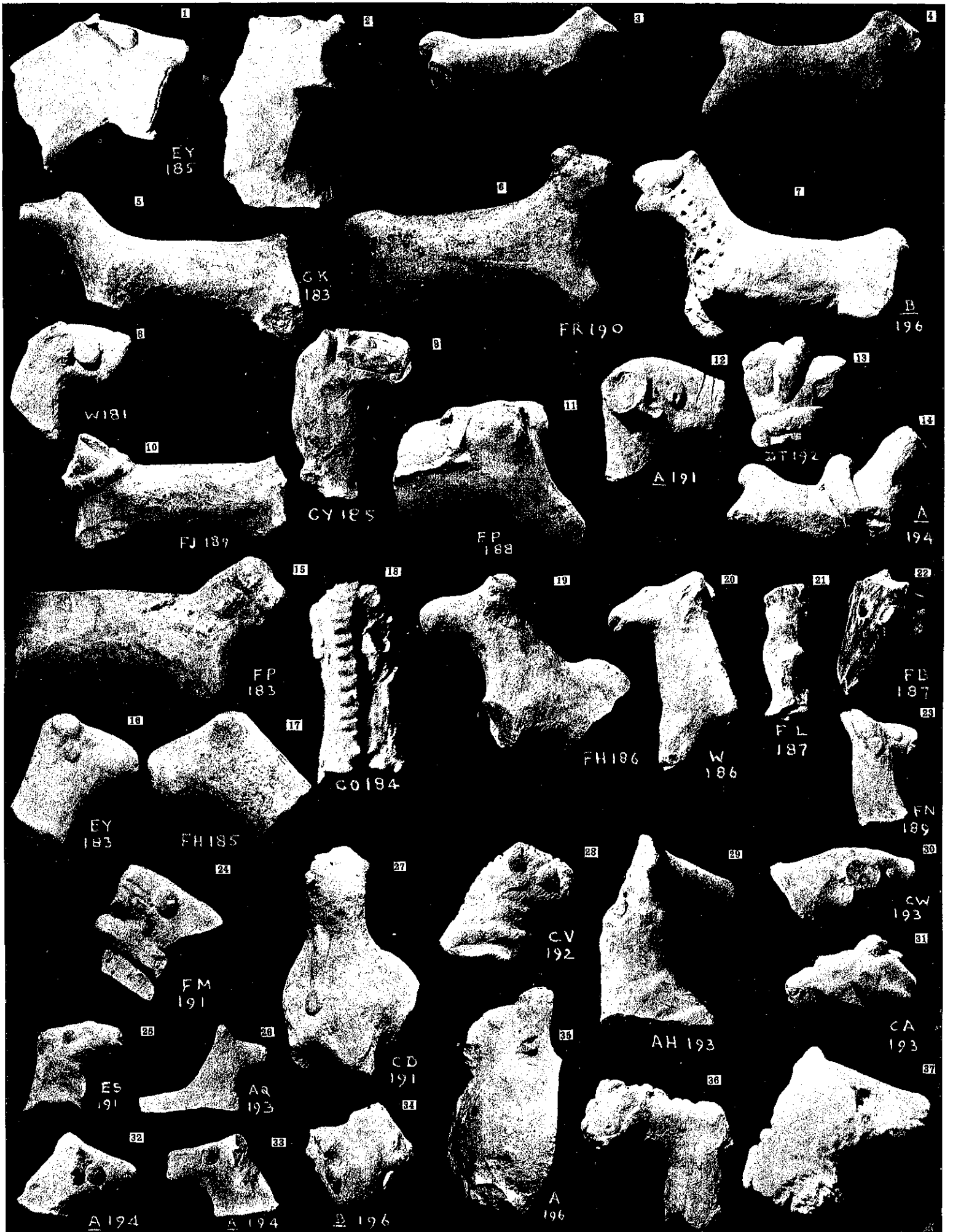


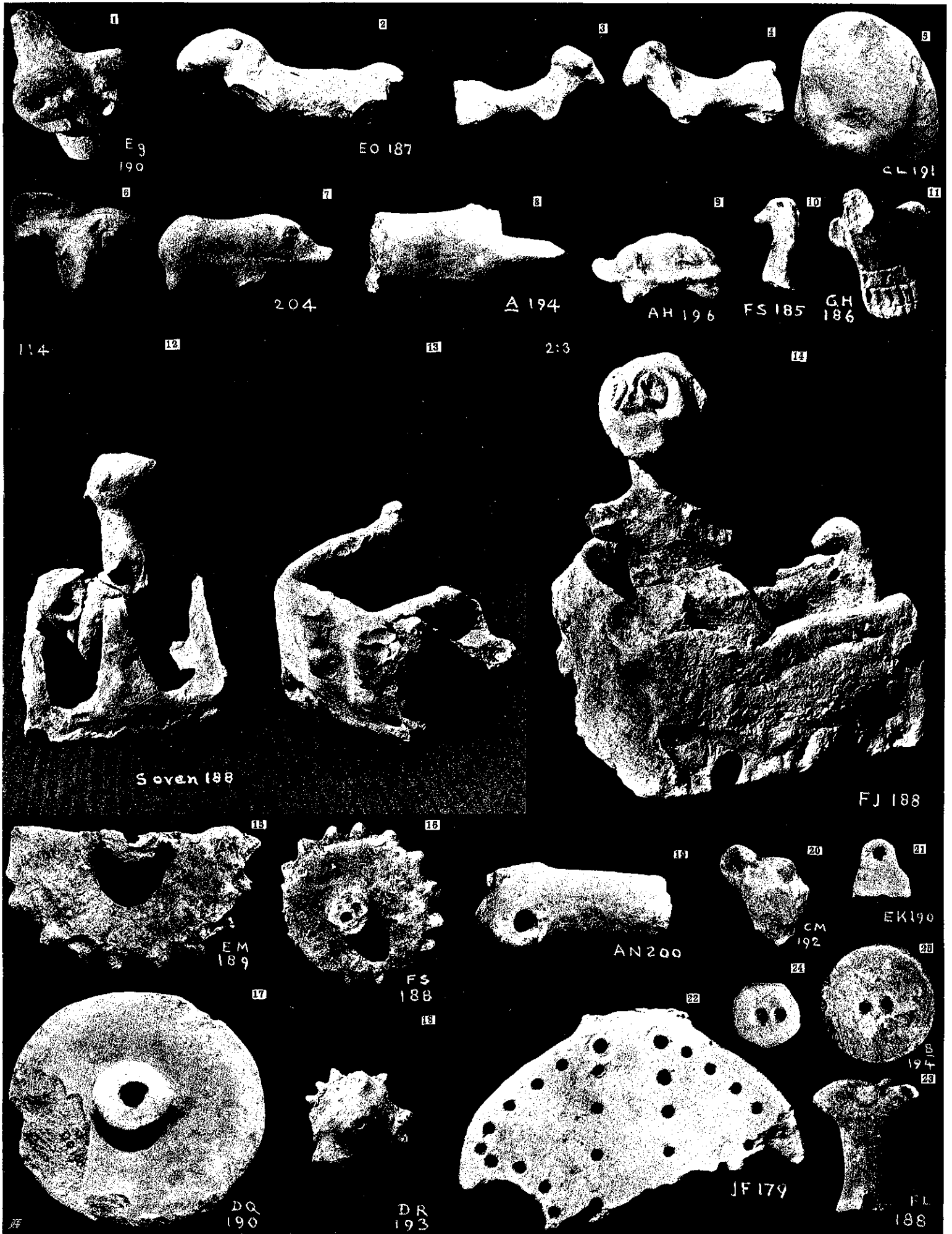
APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.



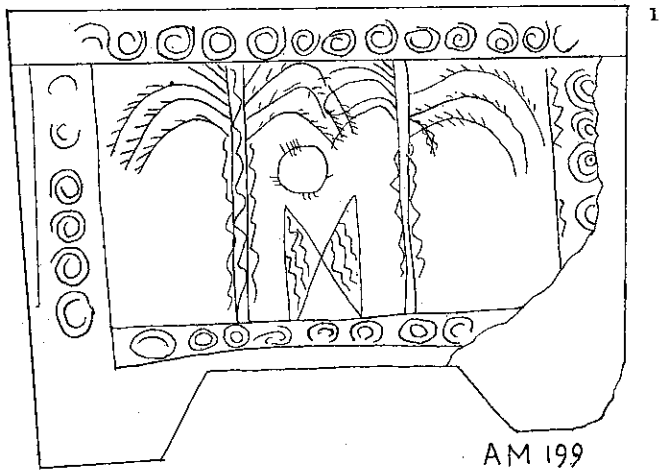




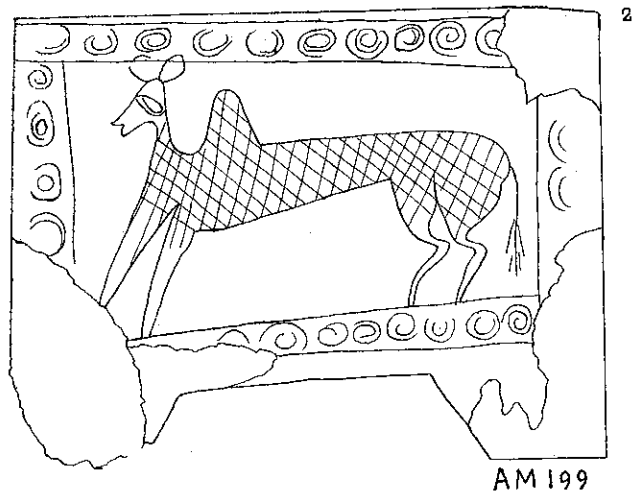




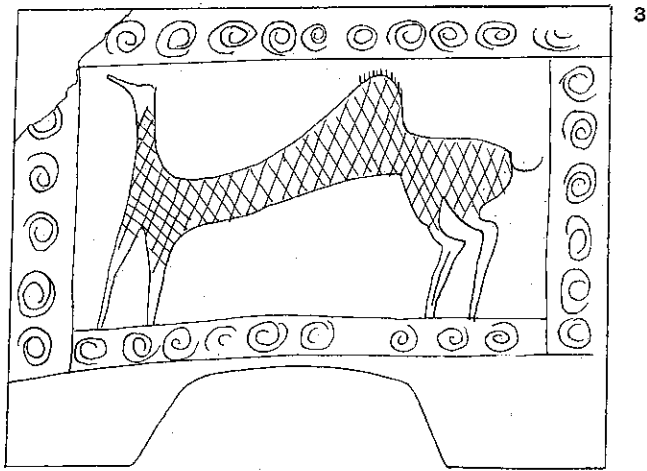




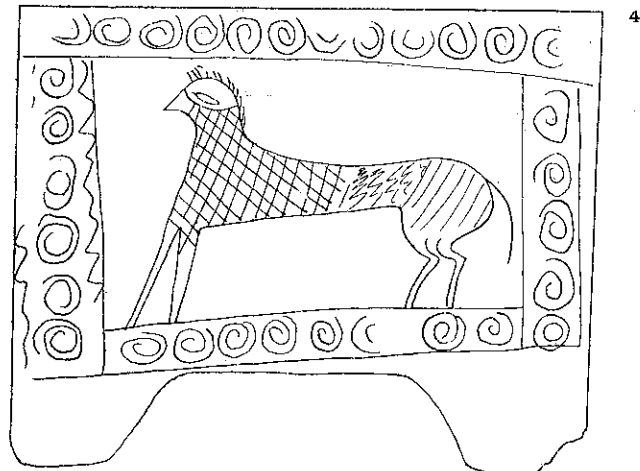
AM 199



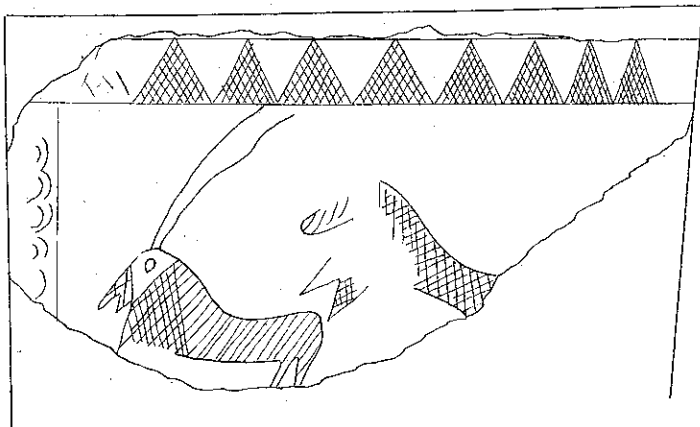
AM 199



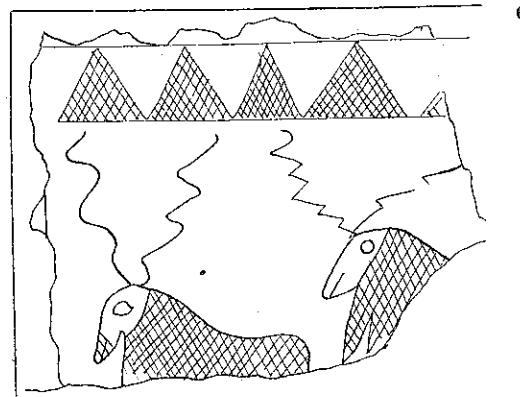
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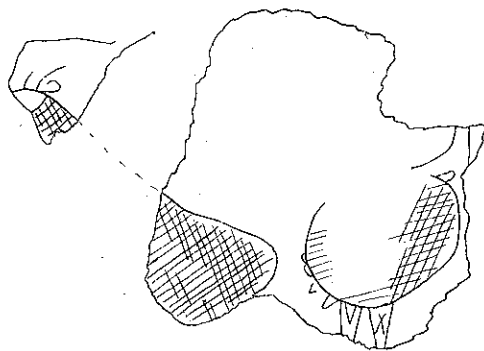
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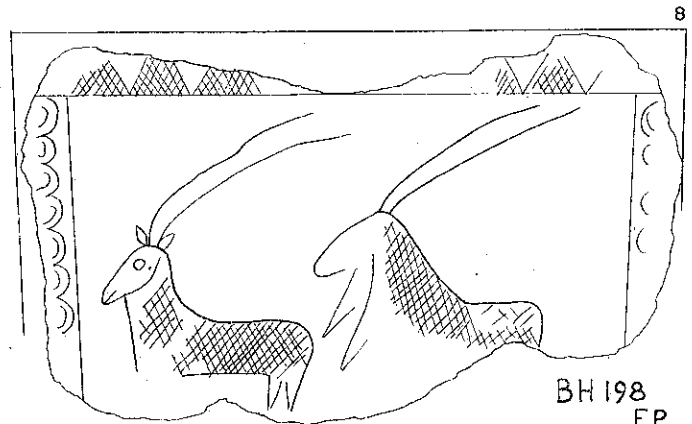
BH 198



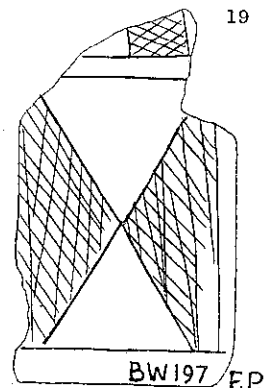
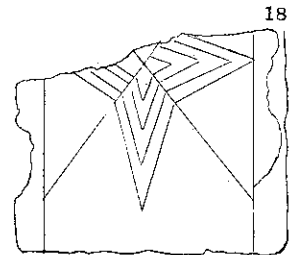
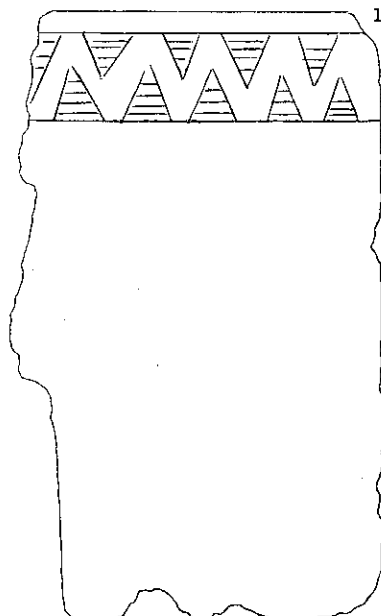
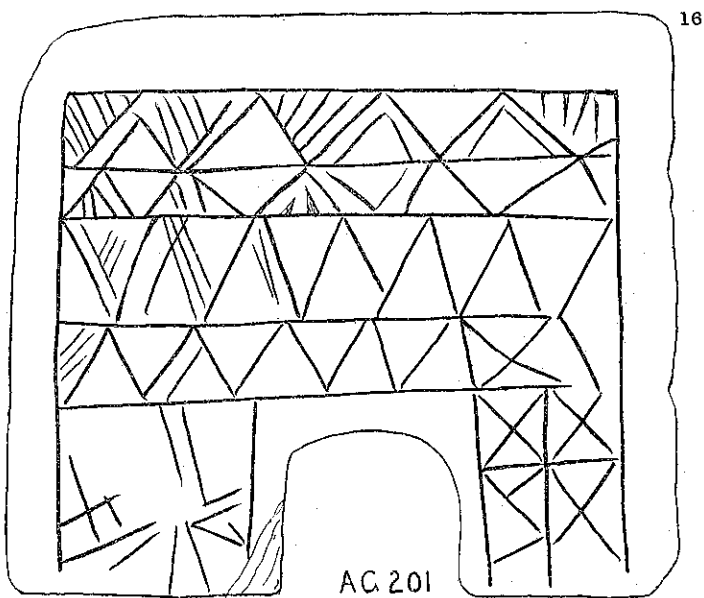
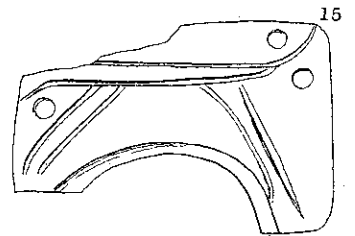
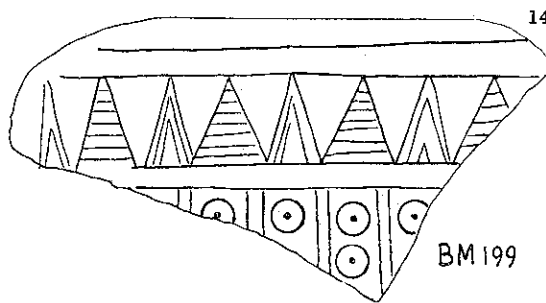
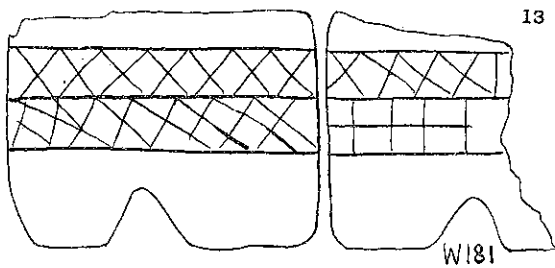
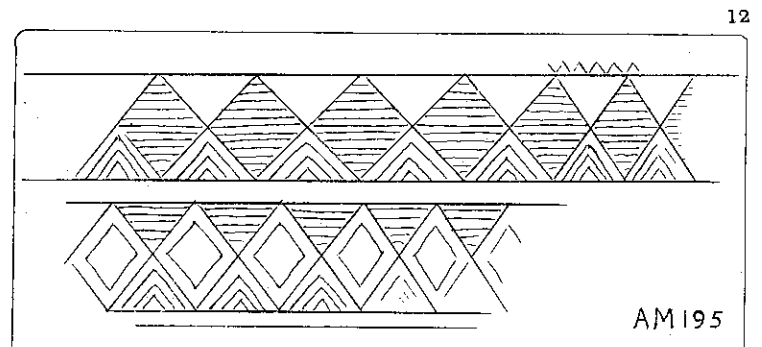
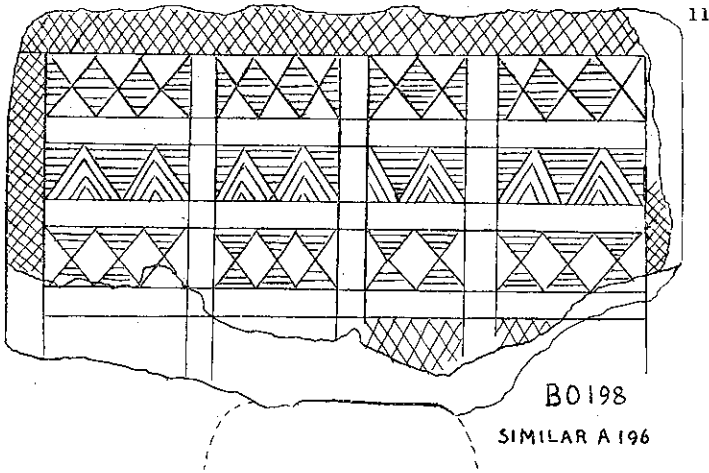
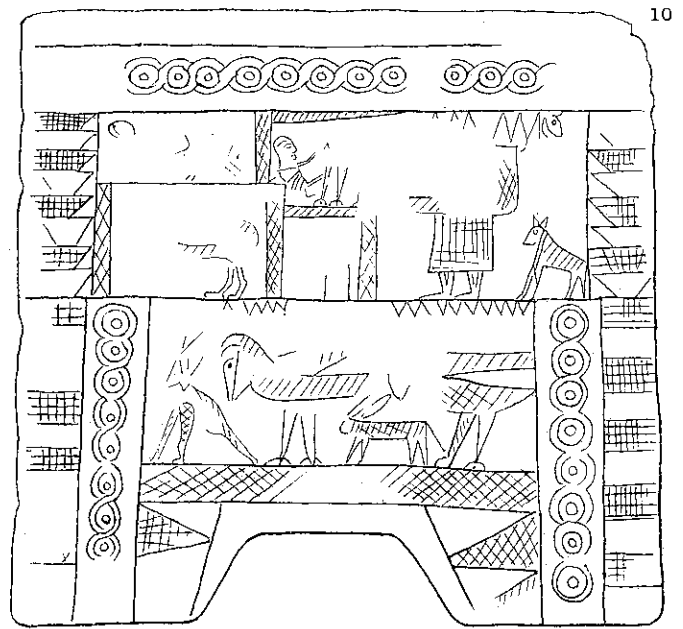
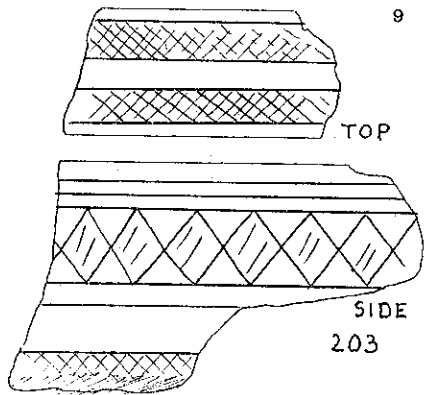
BH 198



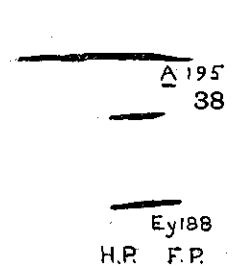
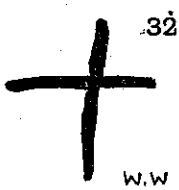
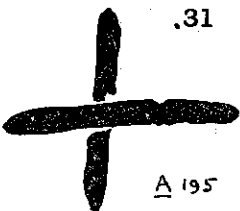
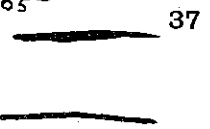
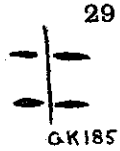
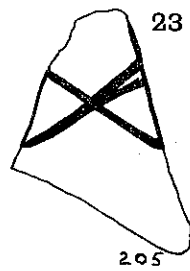
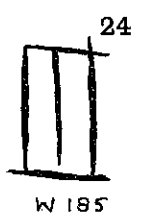
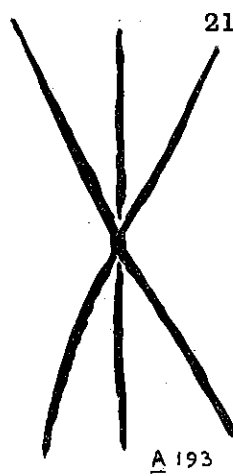
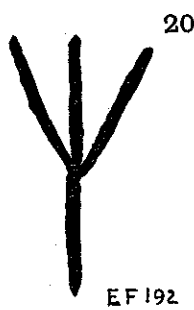
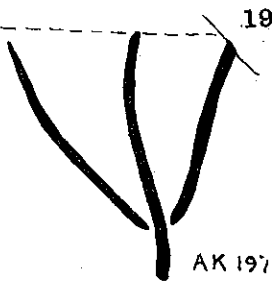
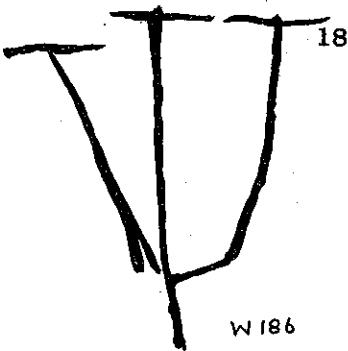
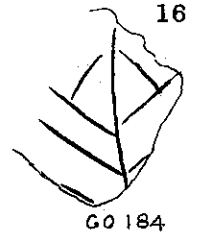
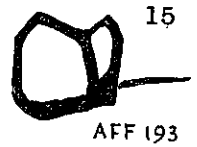
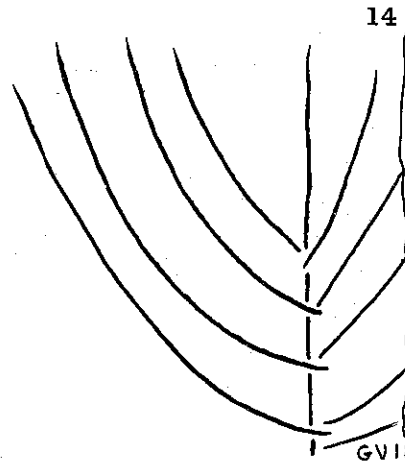
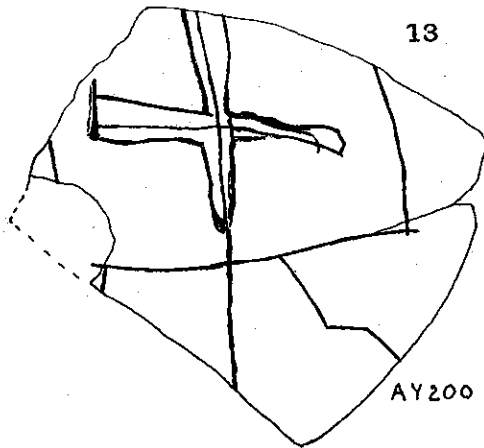
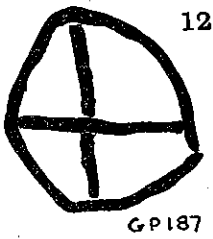
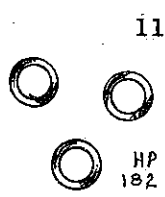
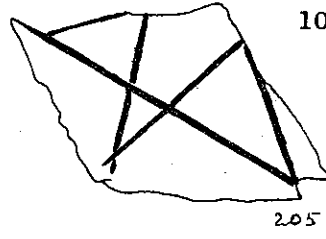
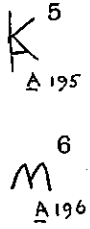
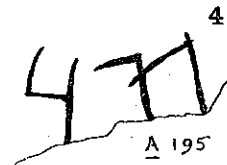
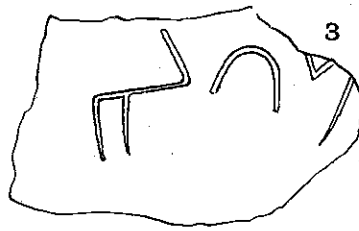
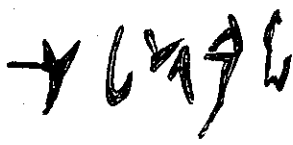
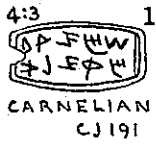
BH 198

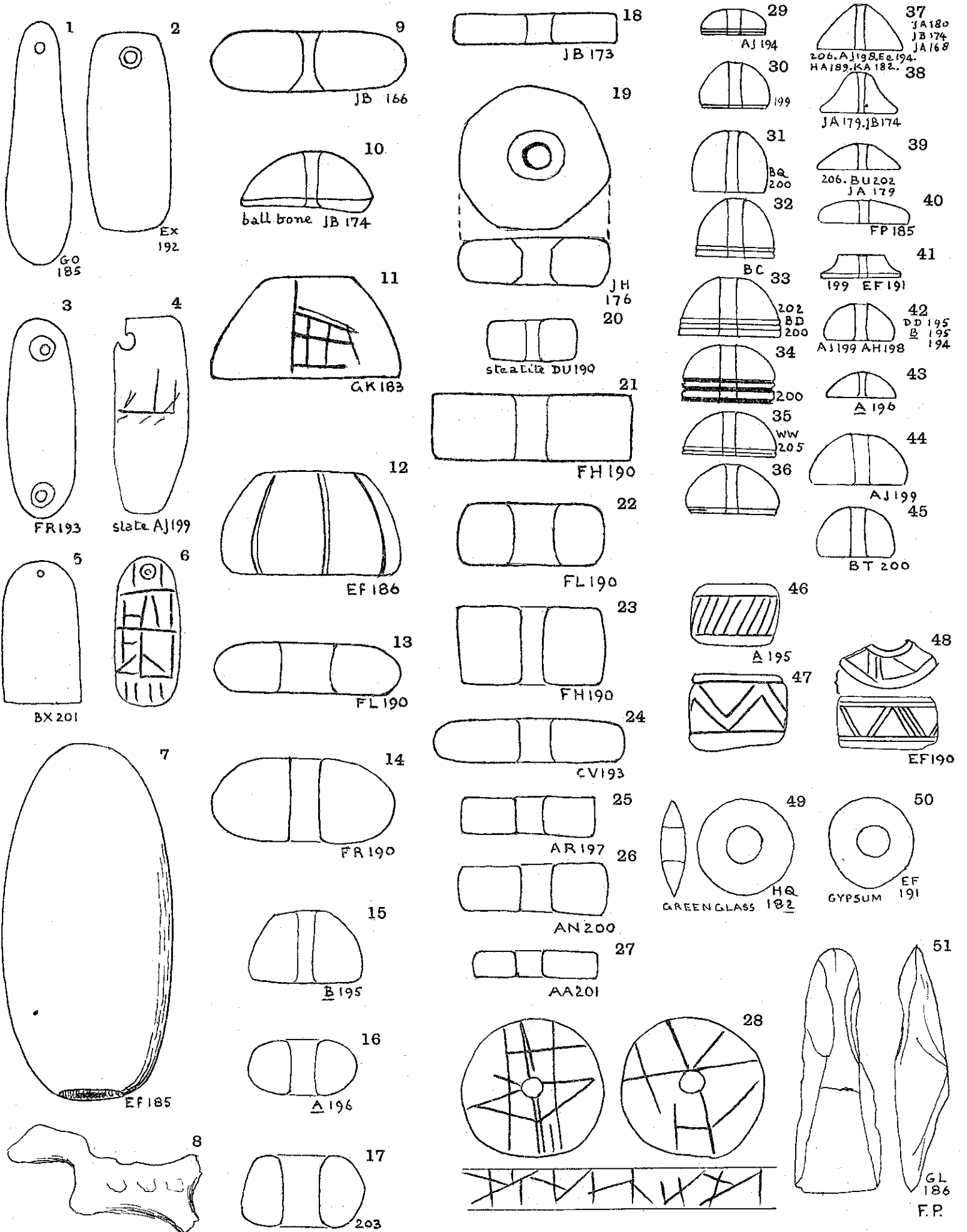


BH 198  
F.P.





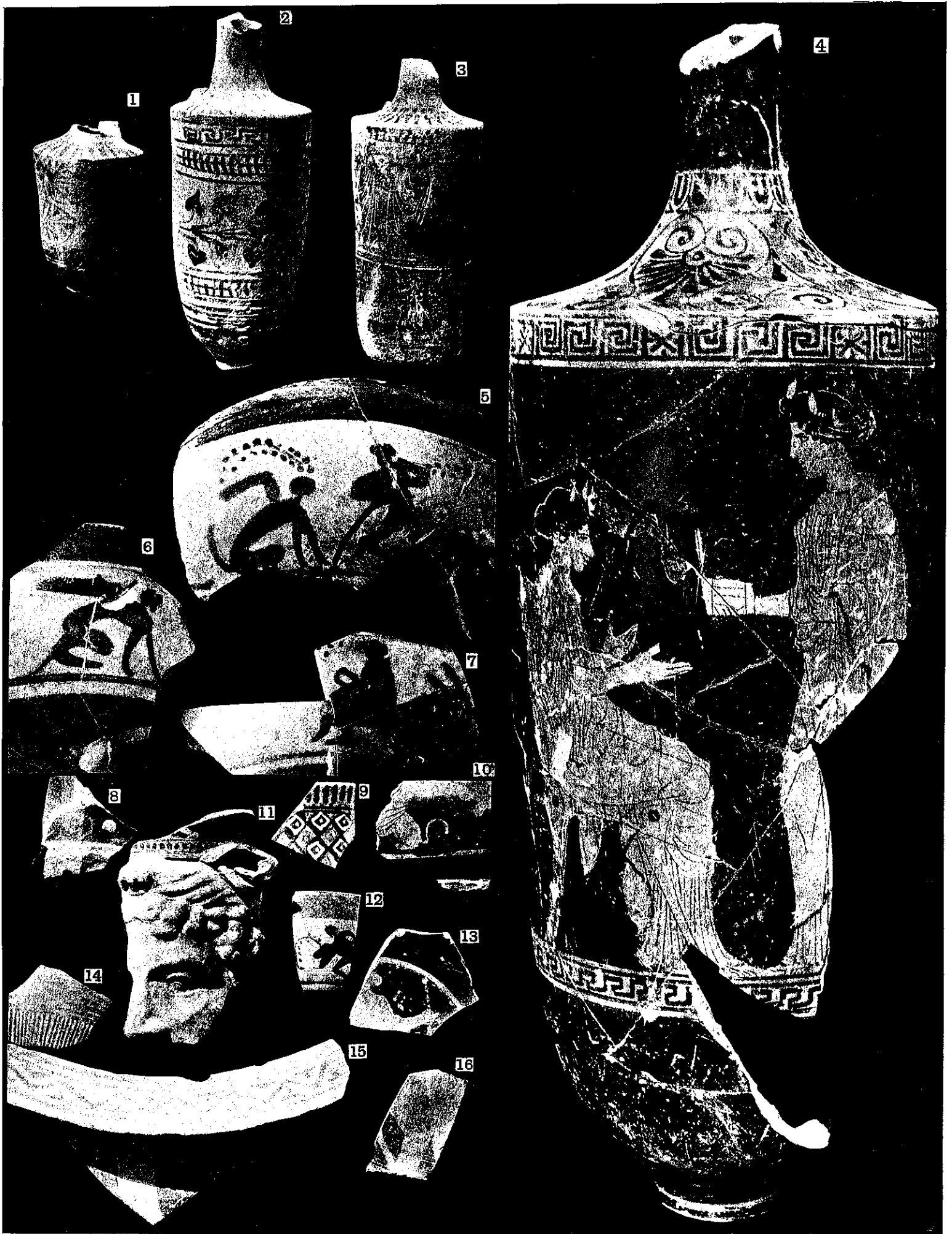


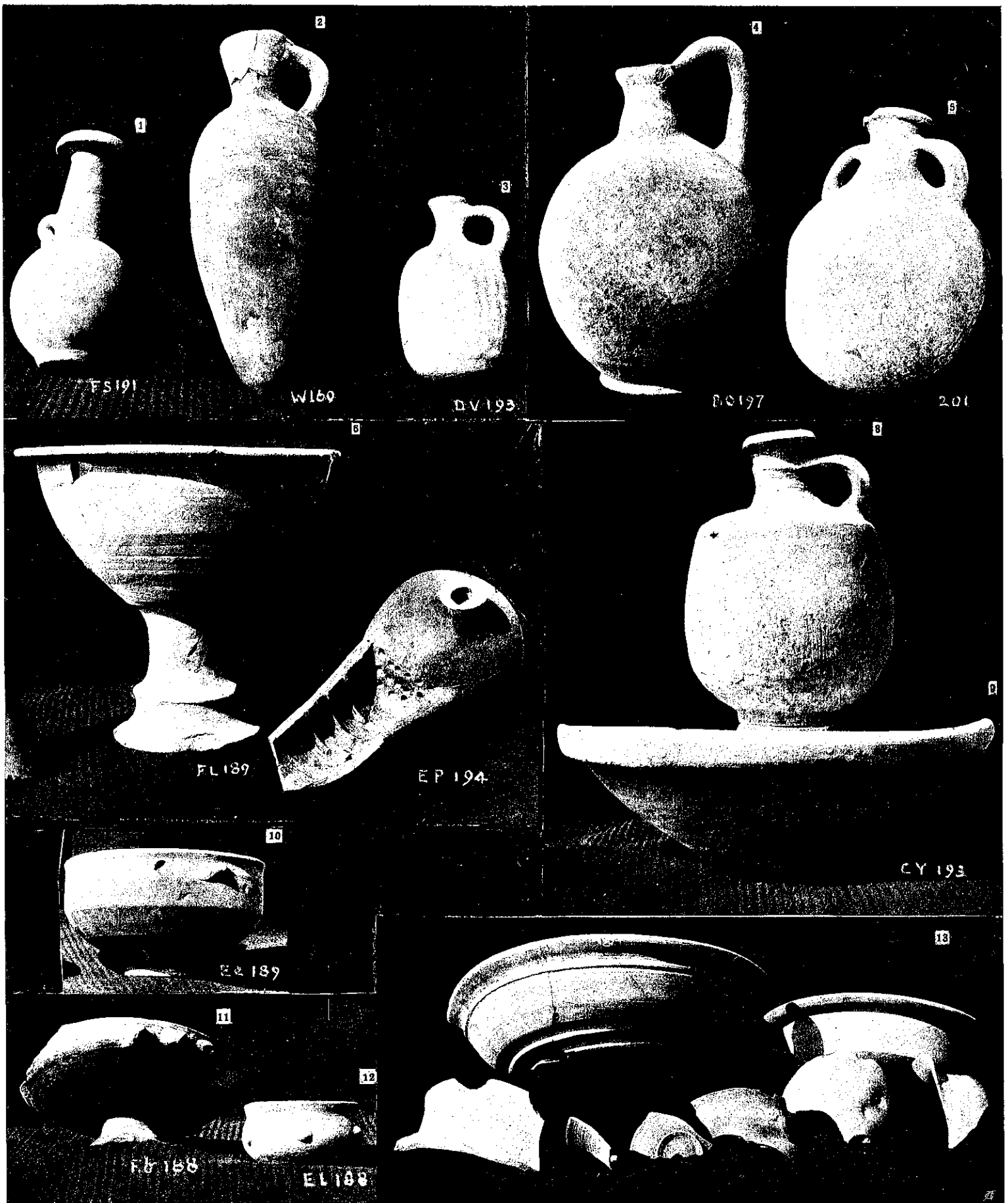


APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.

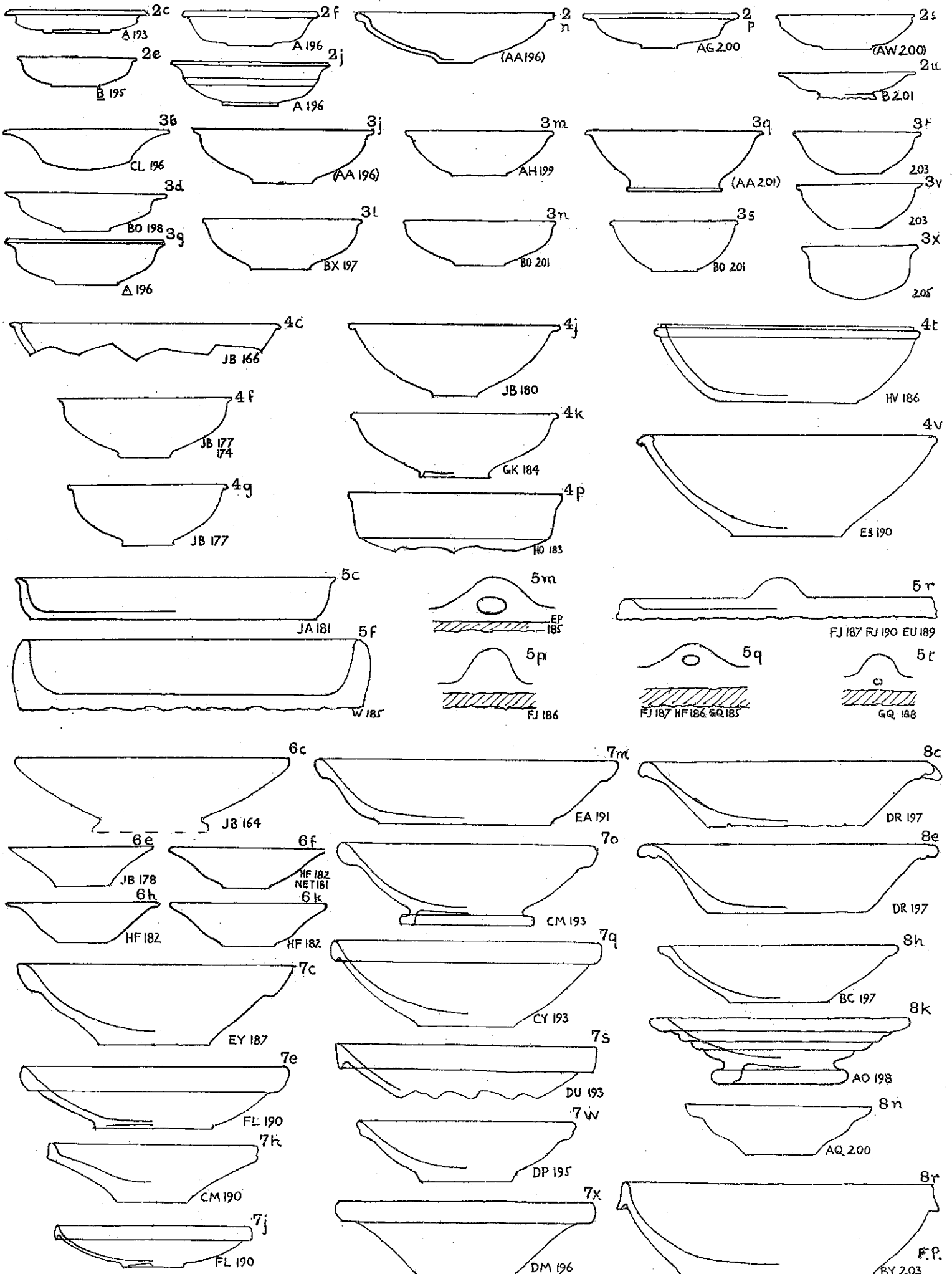


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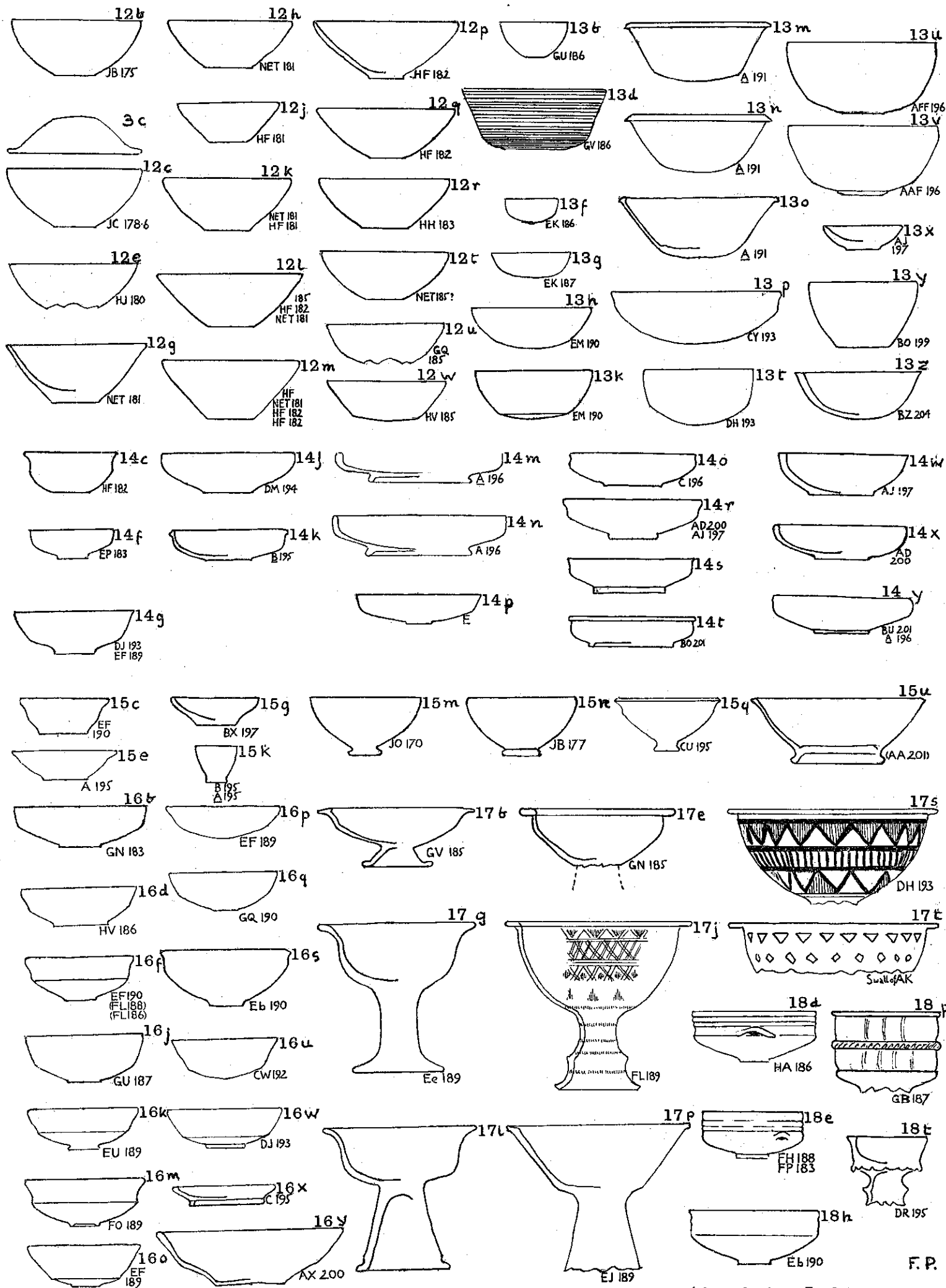






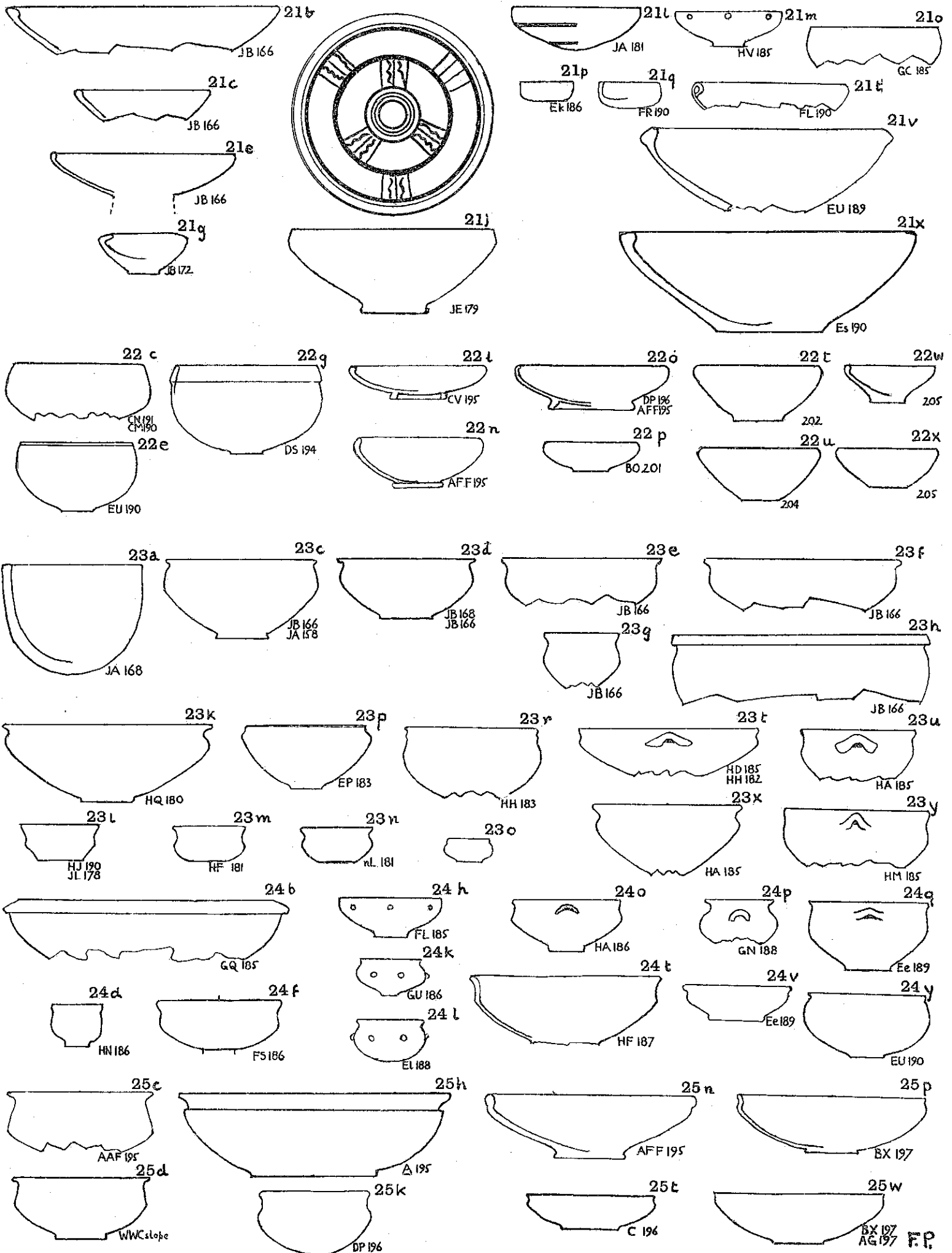


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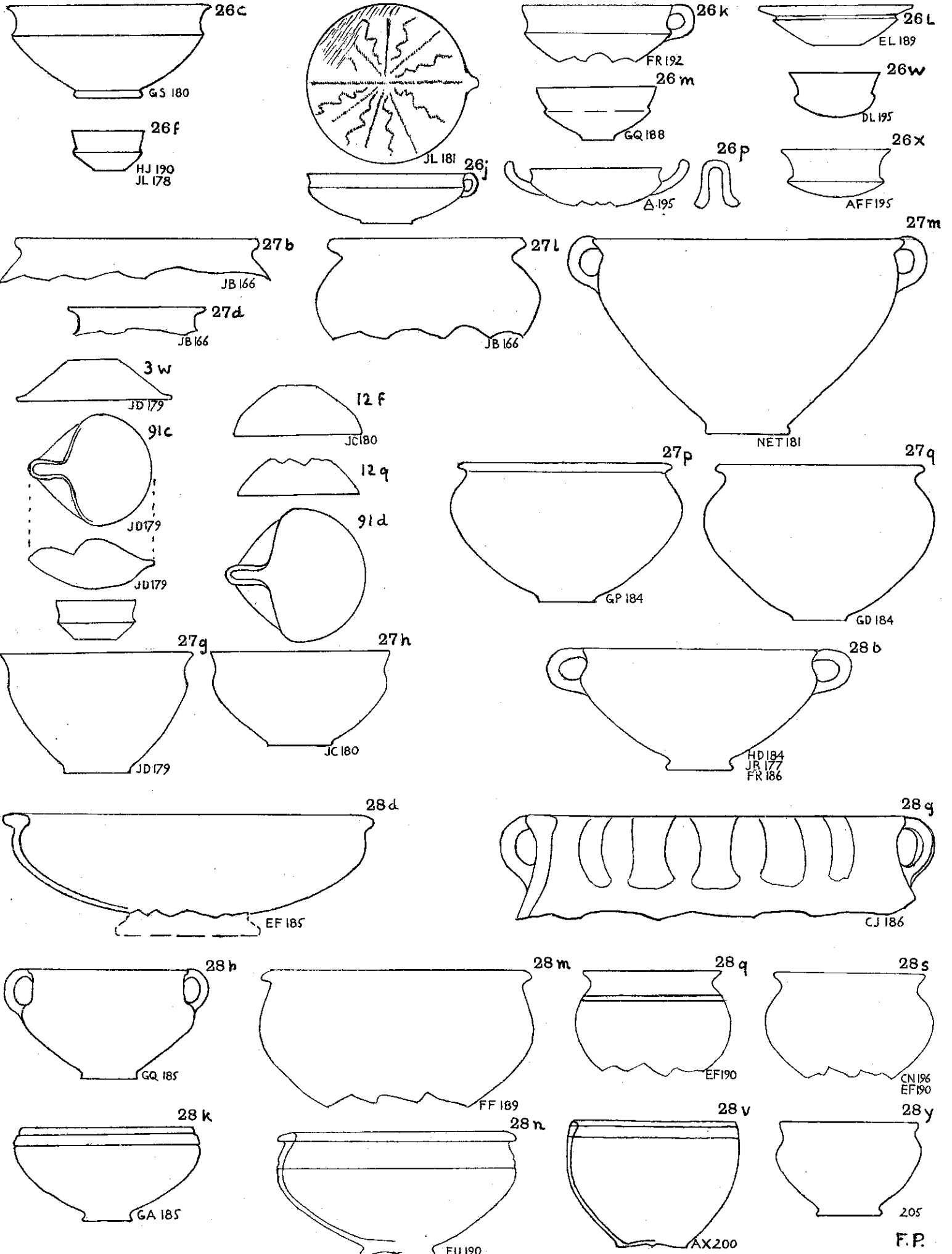


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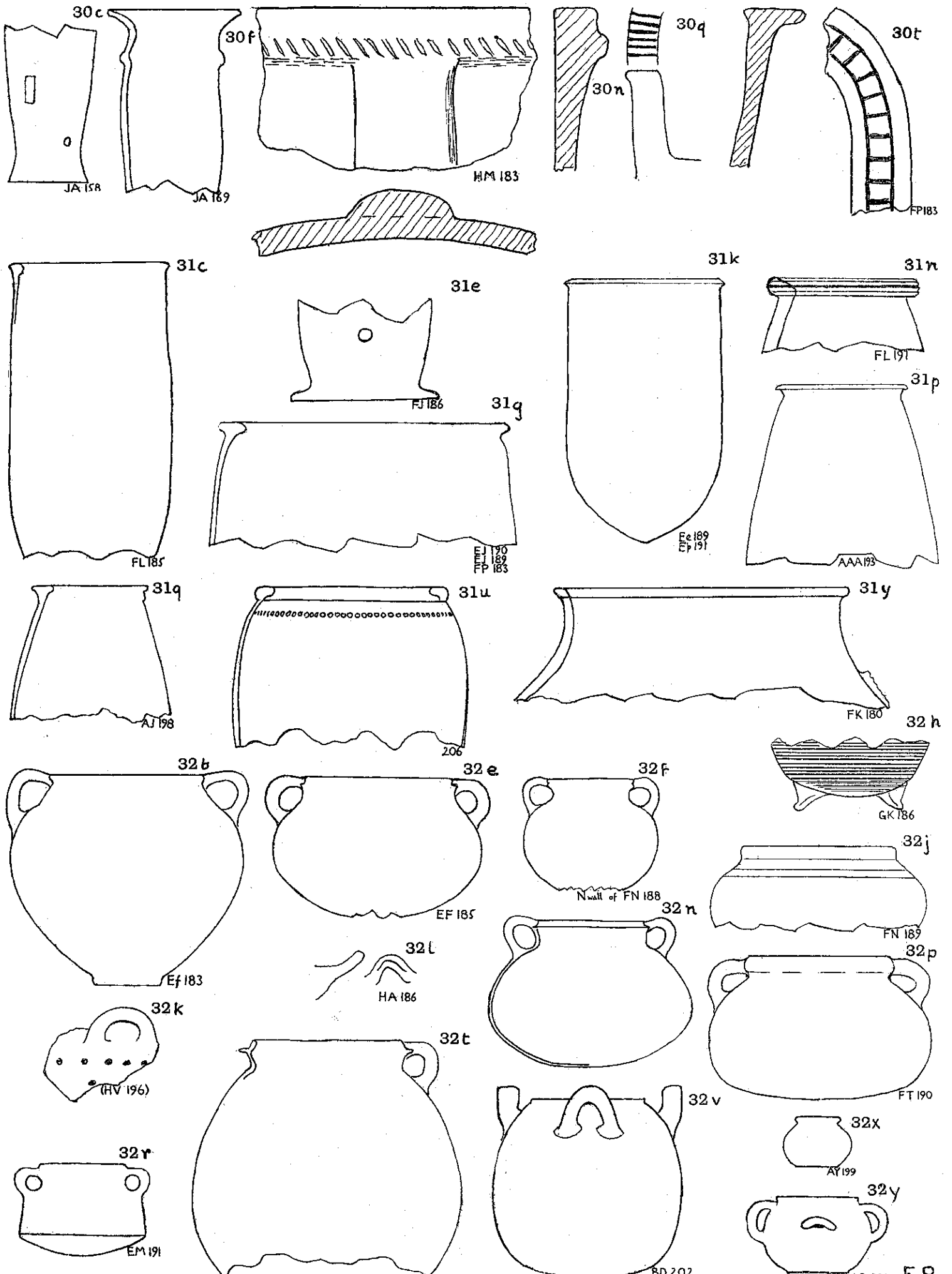
F.P.



APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.

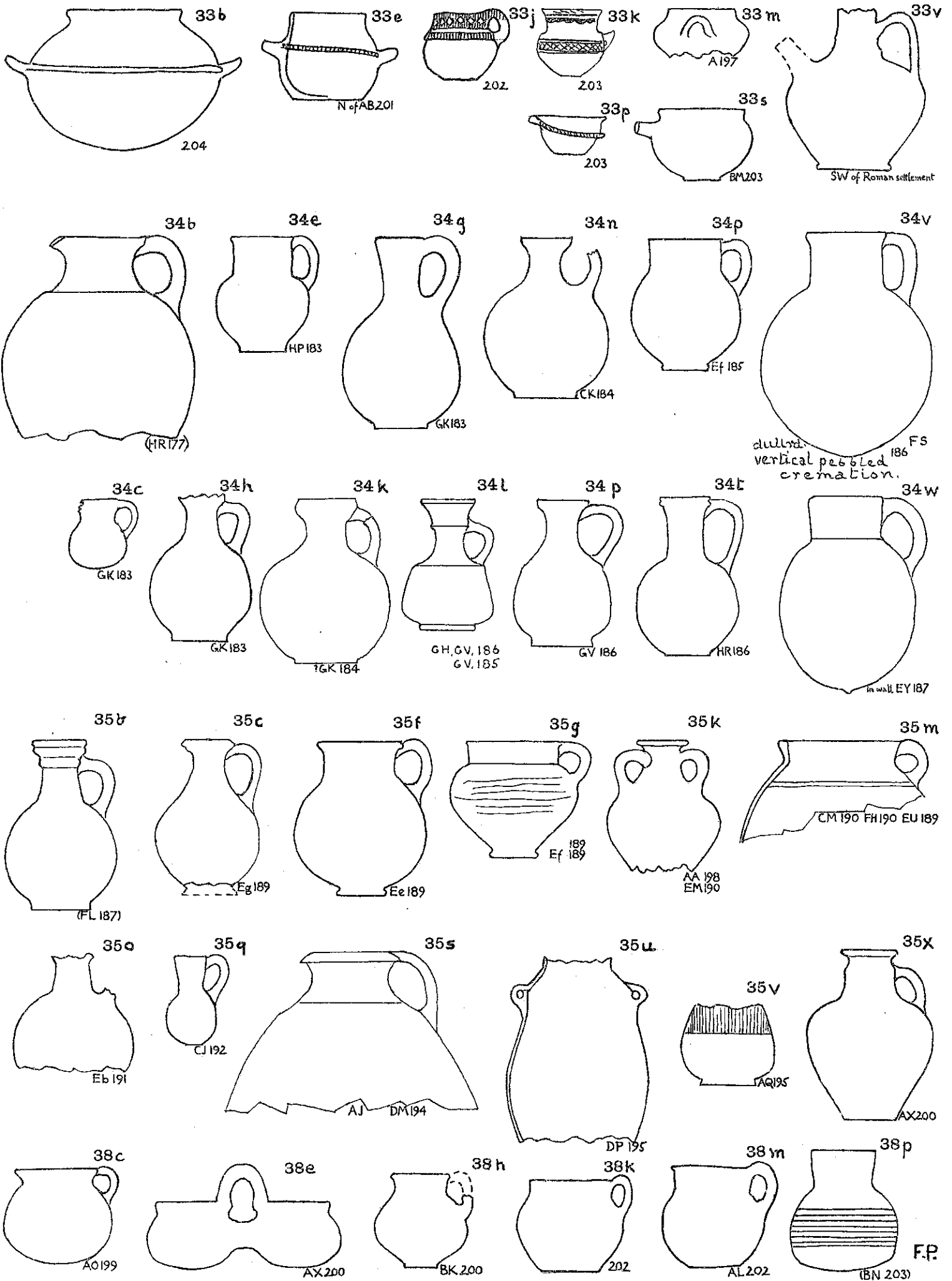


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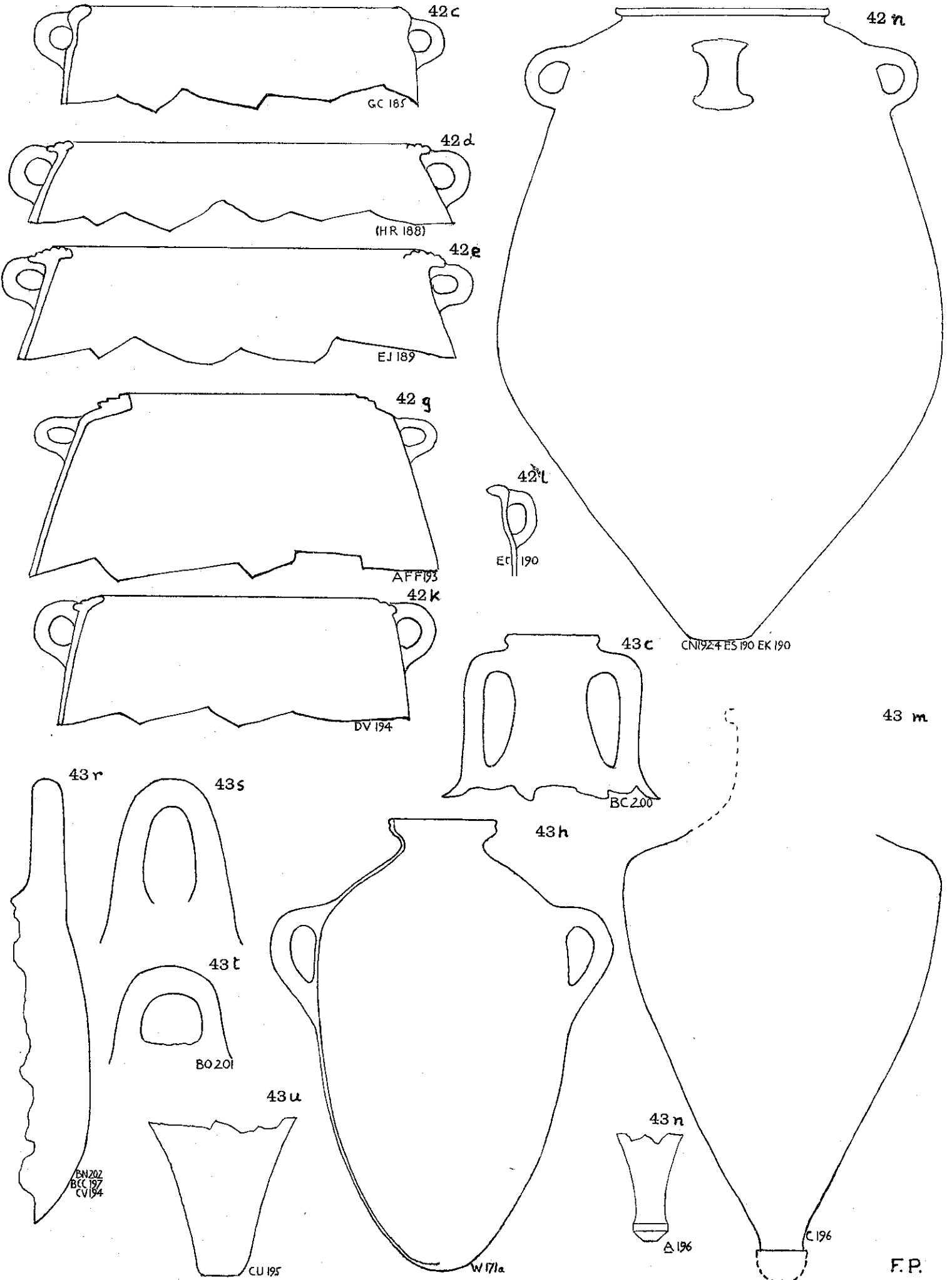


APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 DC.

F. R.



APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.

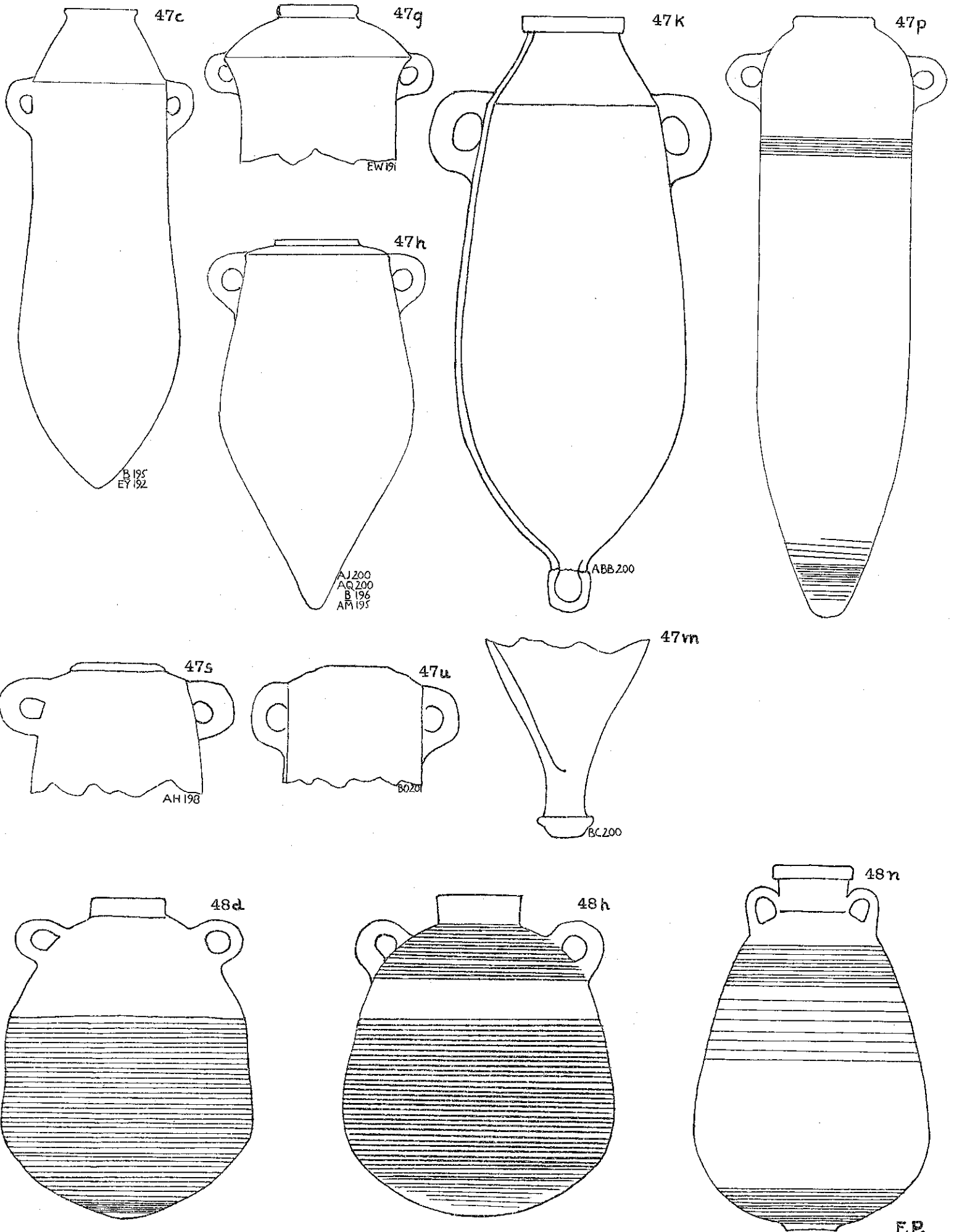


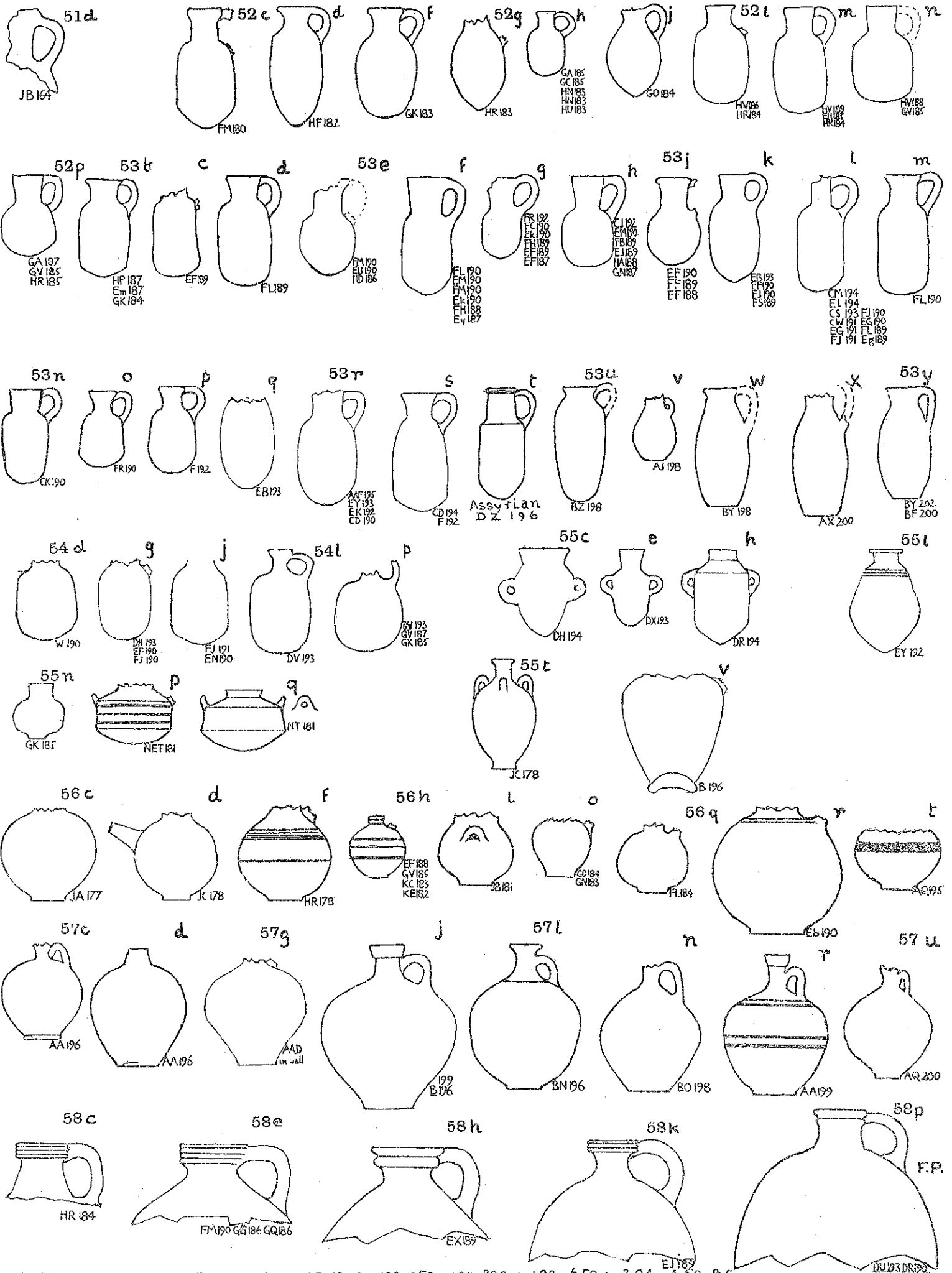
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F.P.

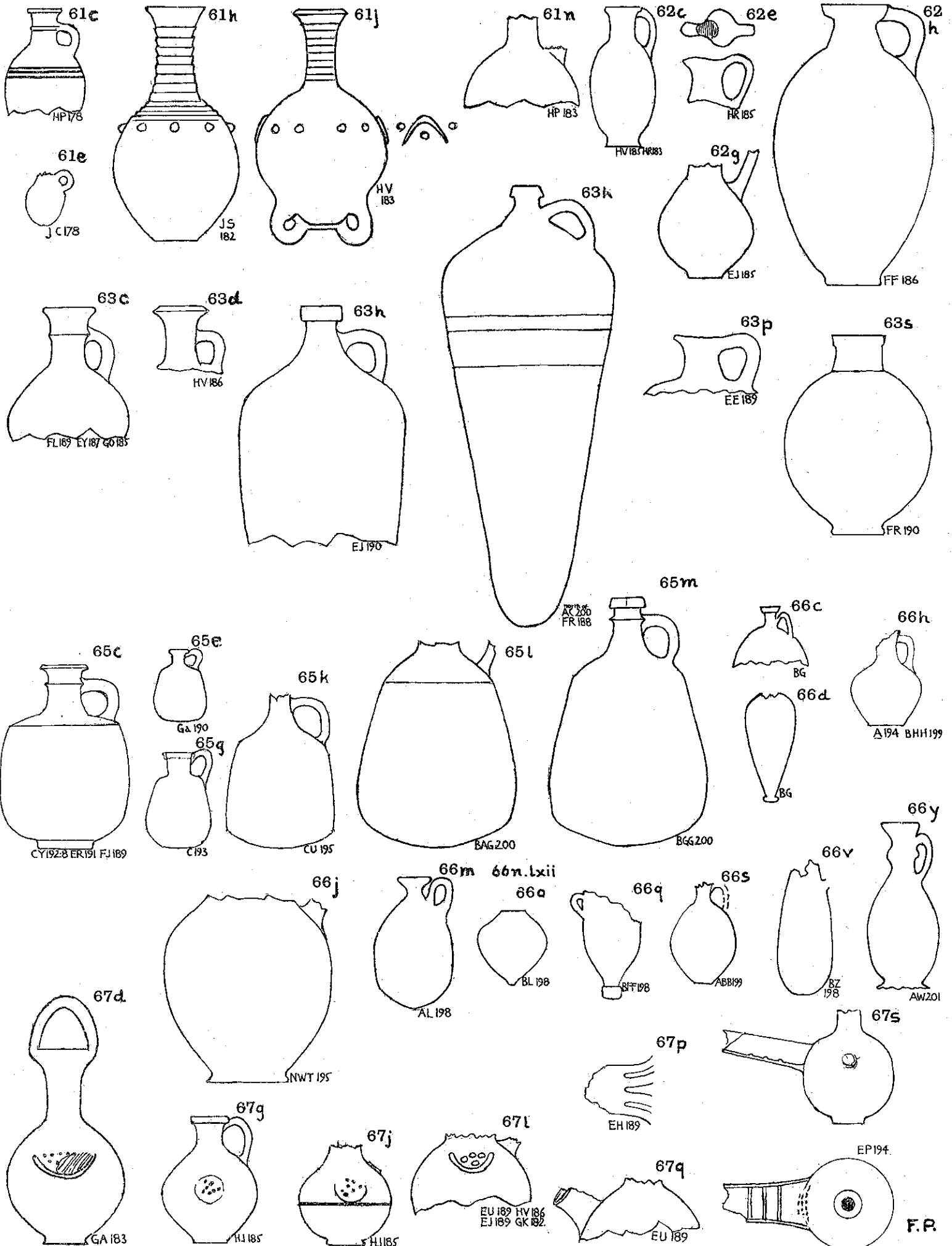




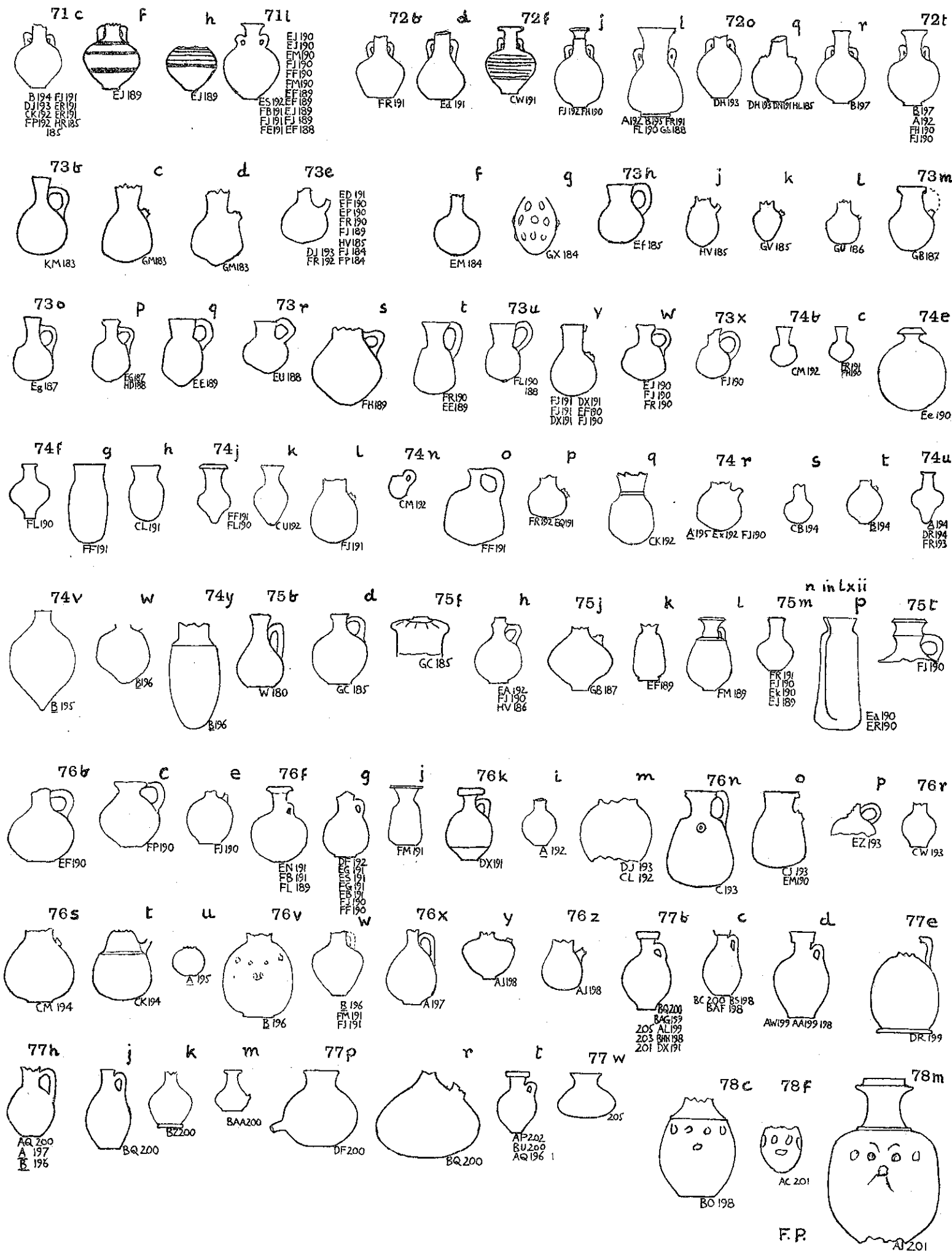


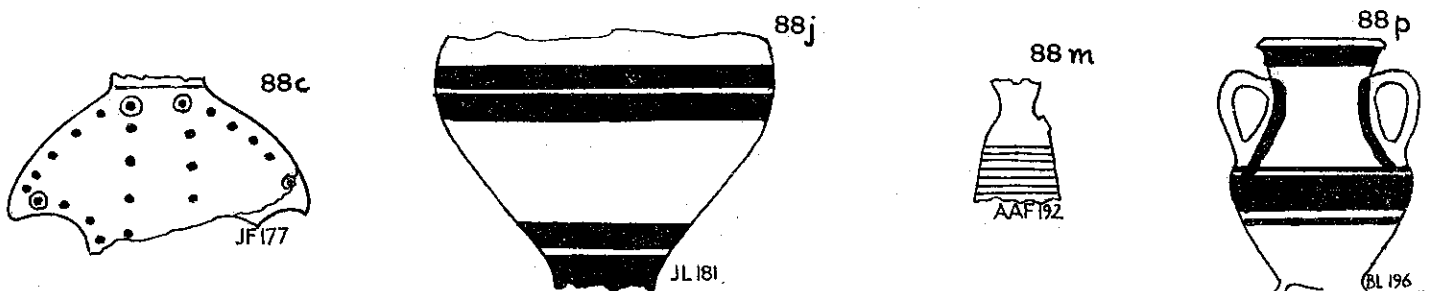
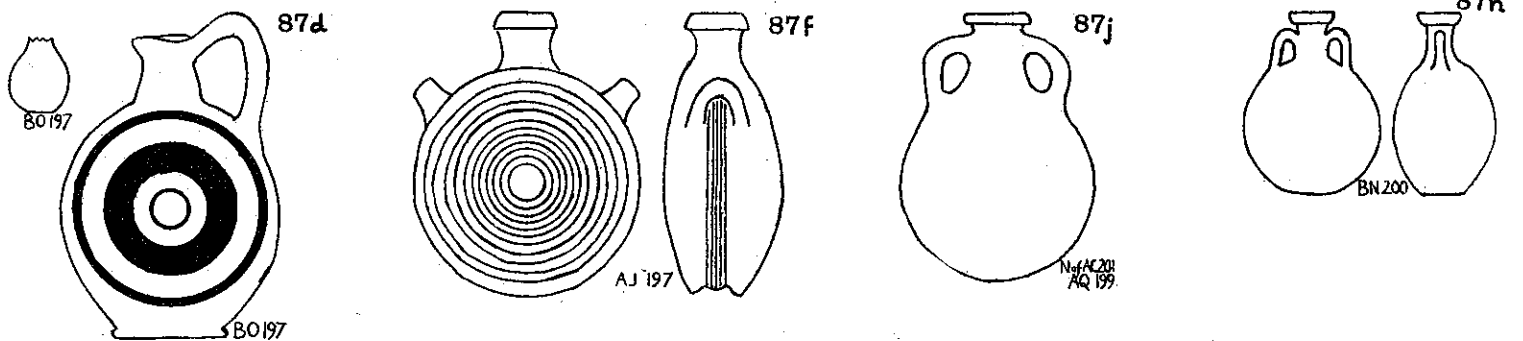
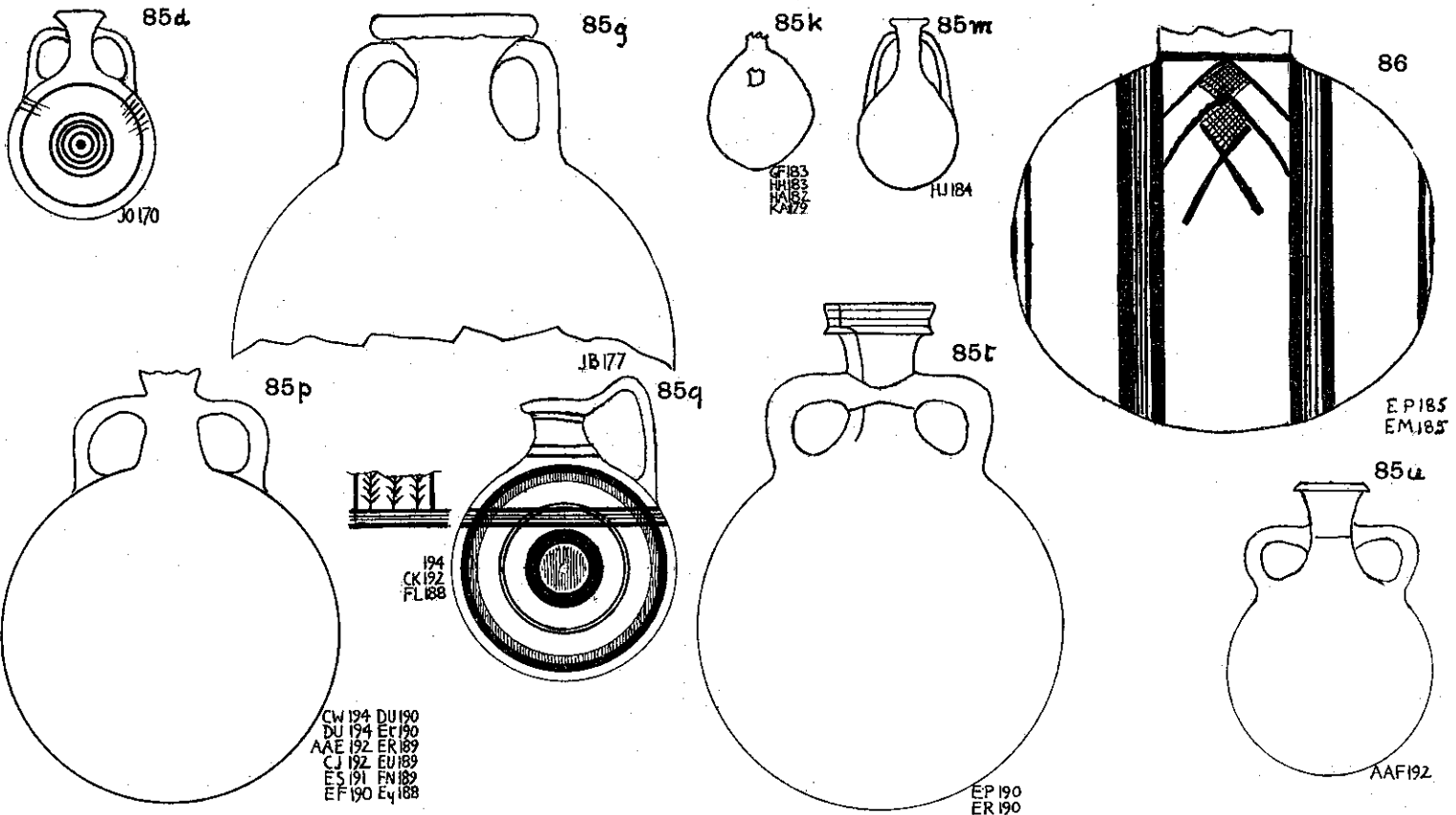
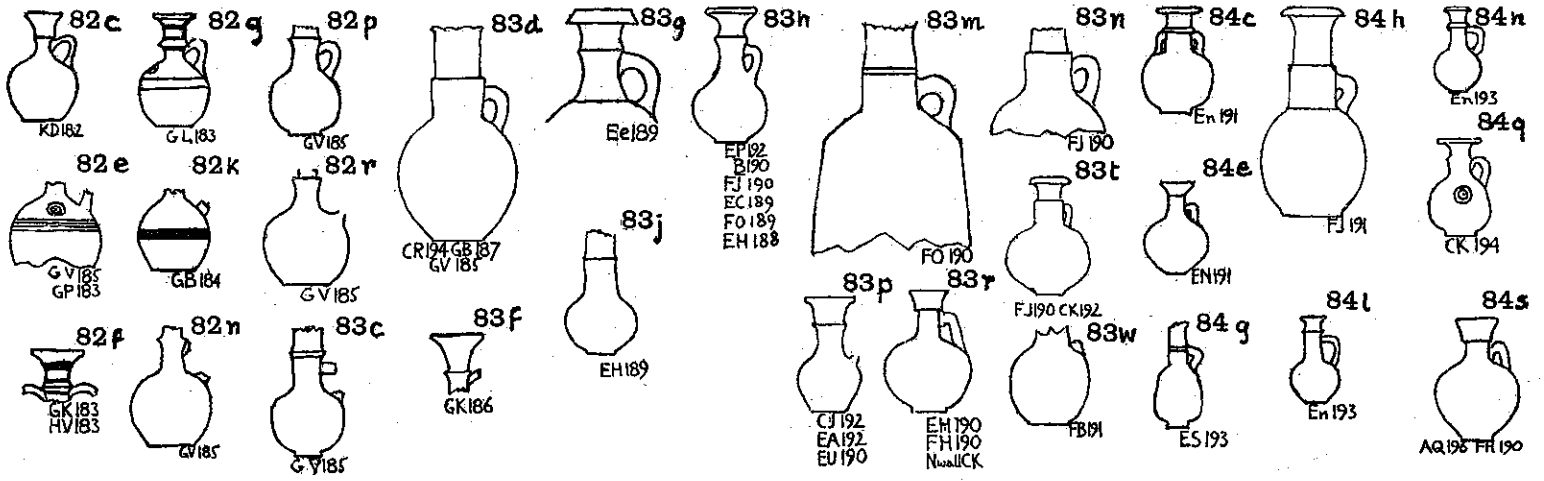


APPROXIMATELY 177 FT = 1500 B.C.; 185, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.

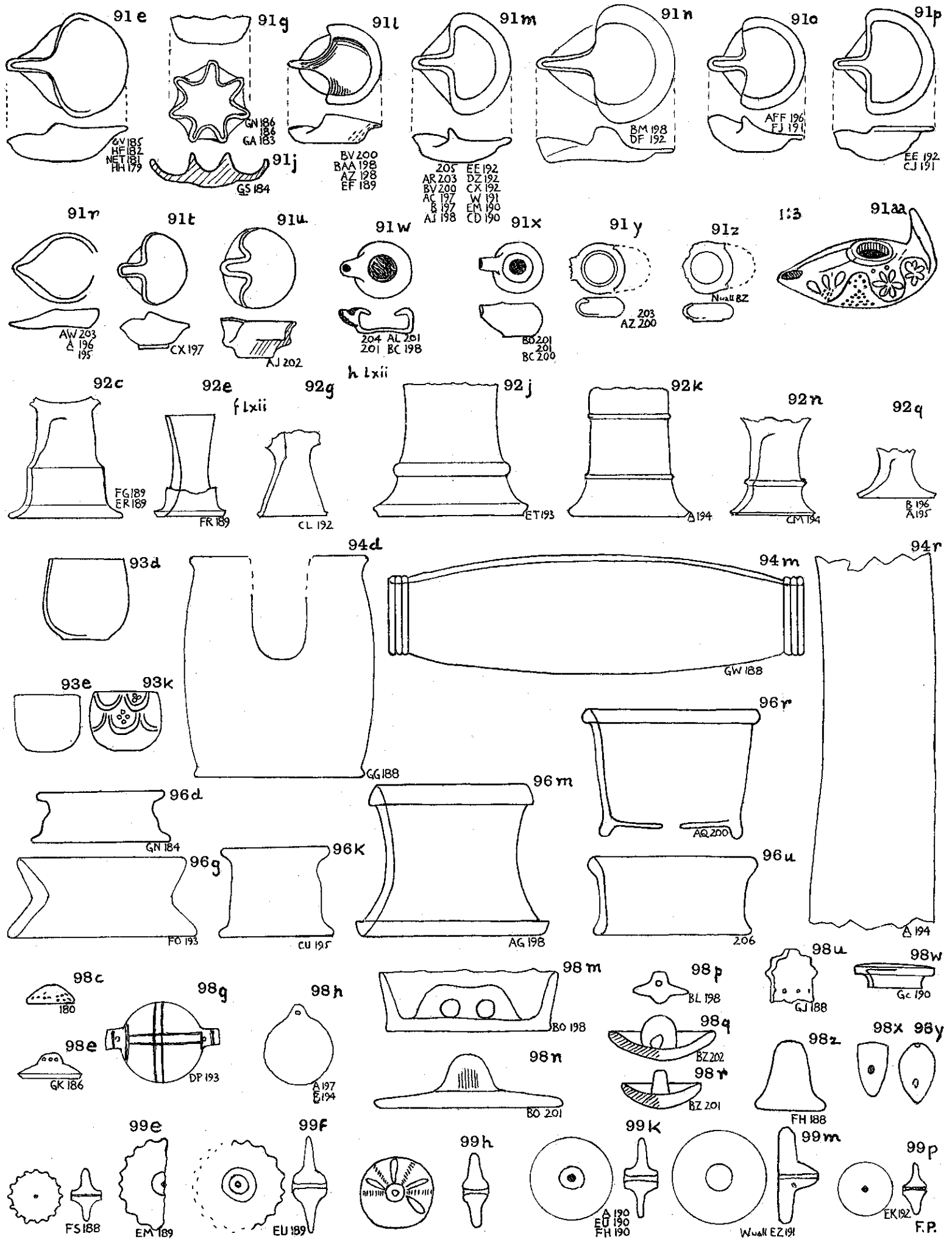


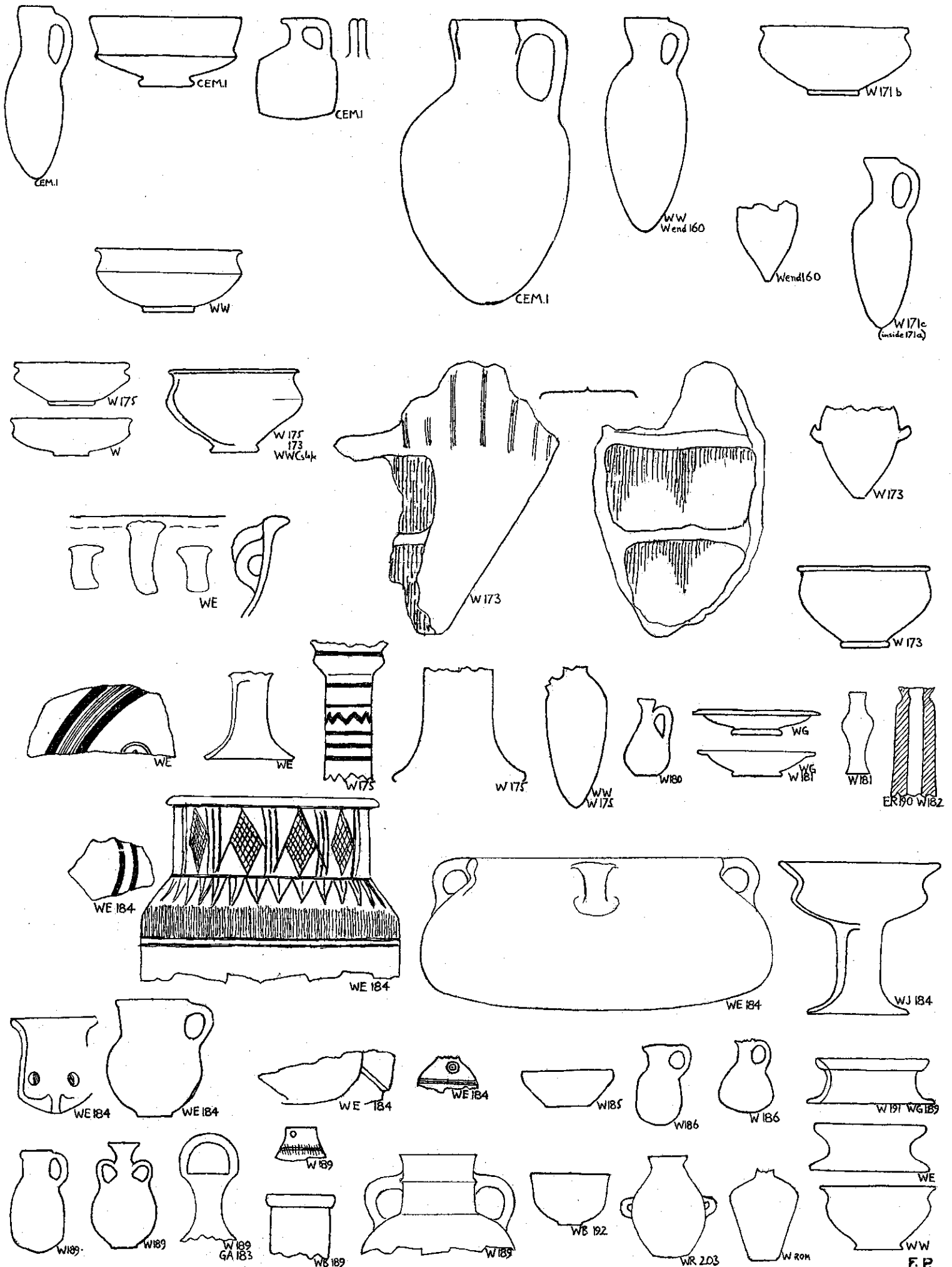
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APPROXIMATELY 177 FT= 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.





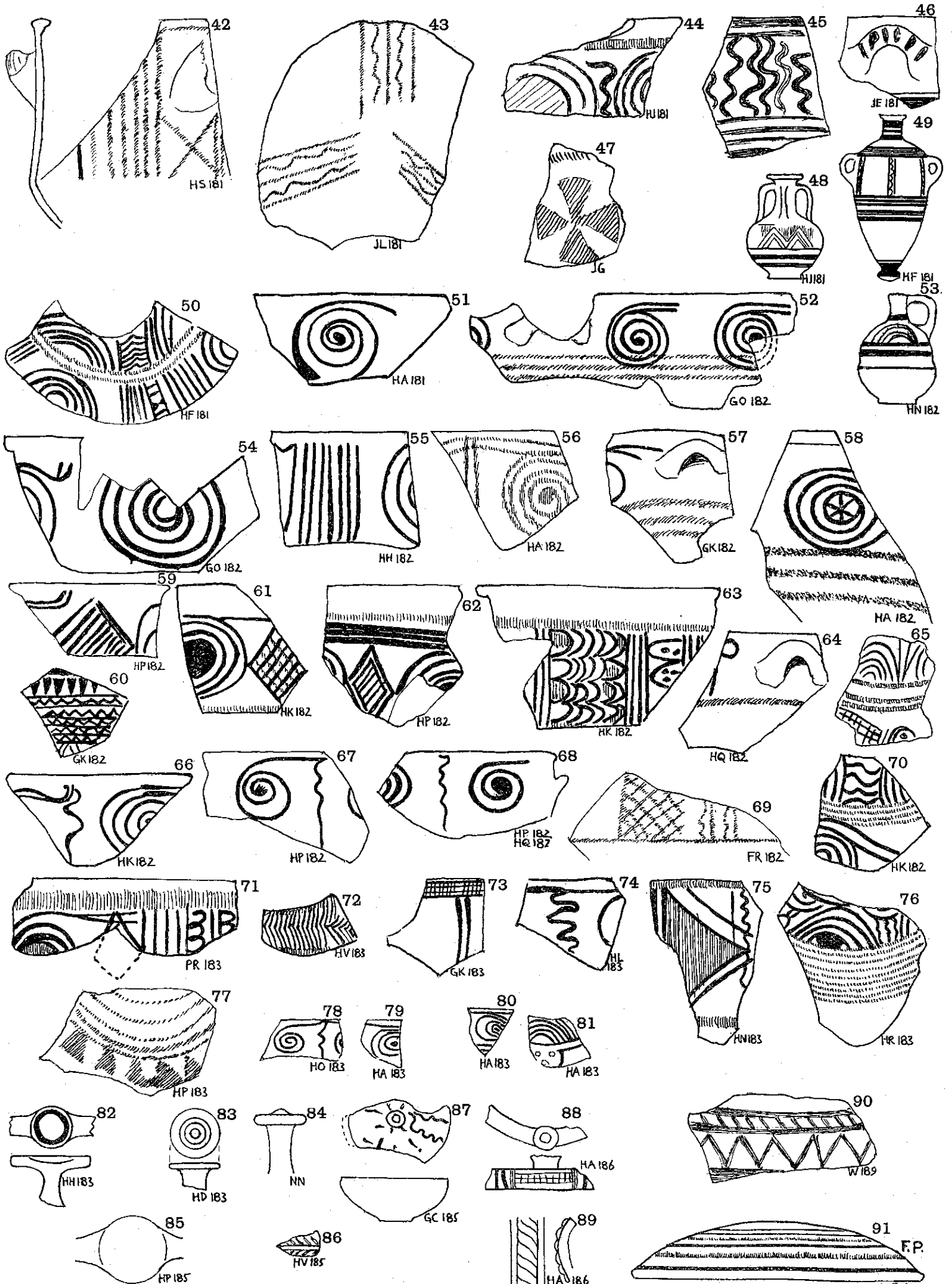
APPROXIMATELY 177 FT = 1300 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.



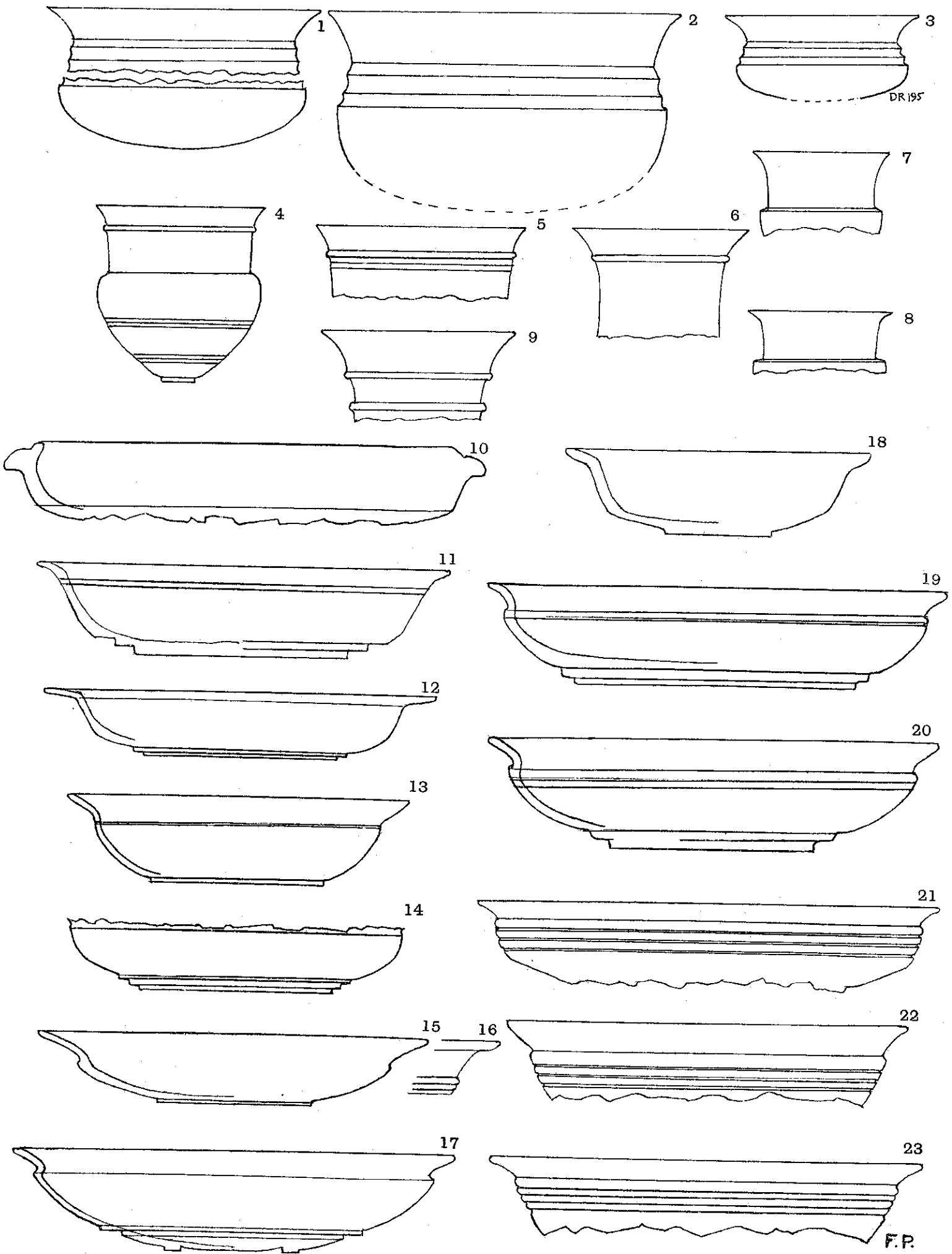
APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 D.C.

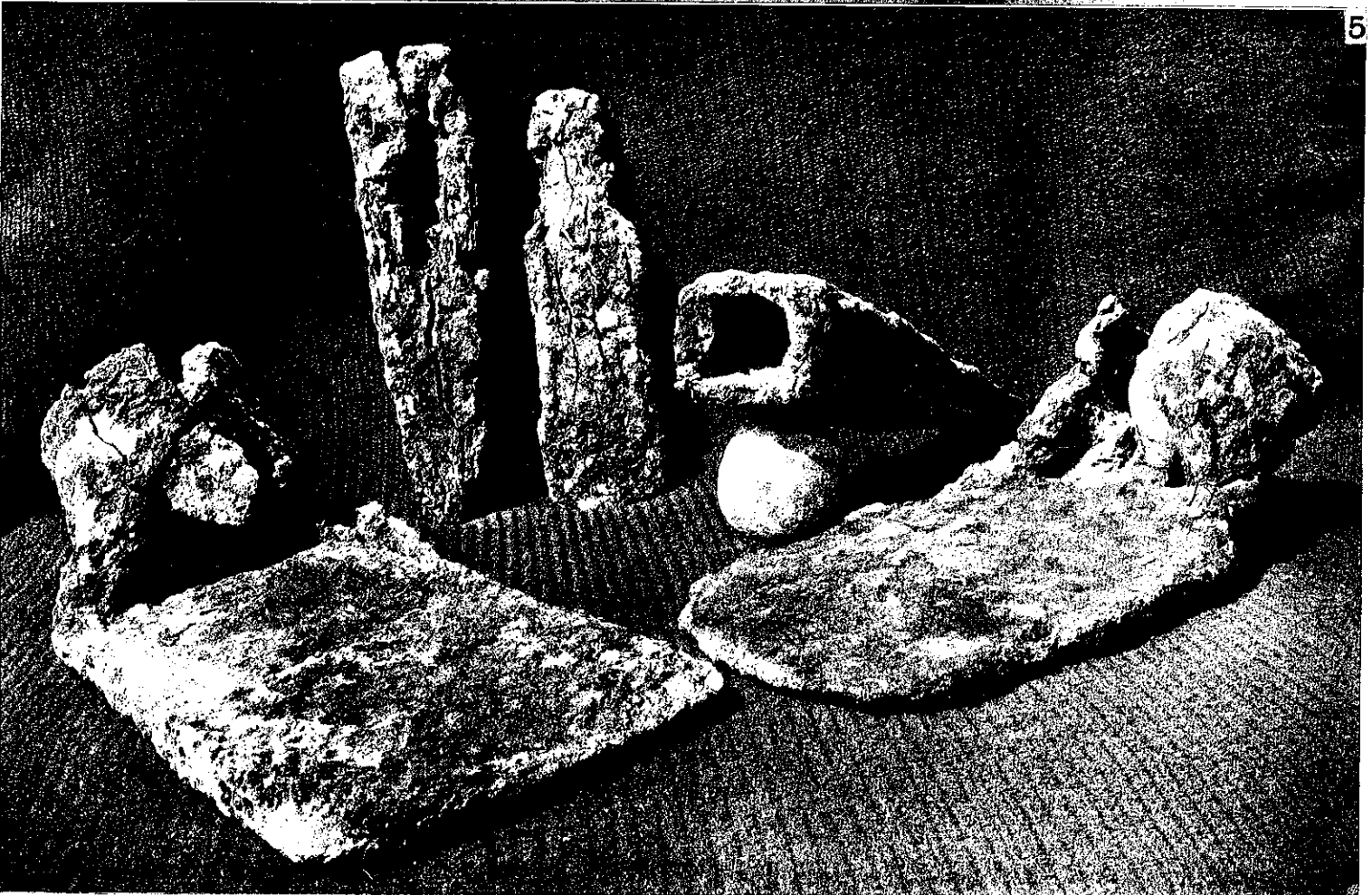
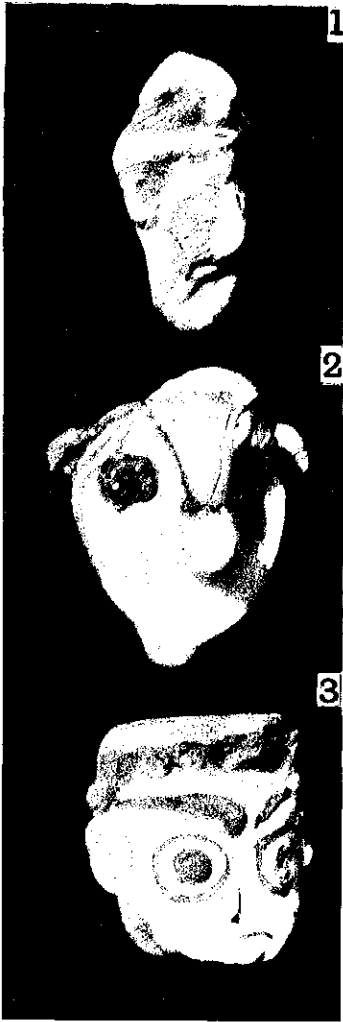
F.P.





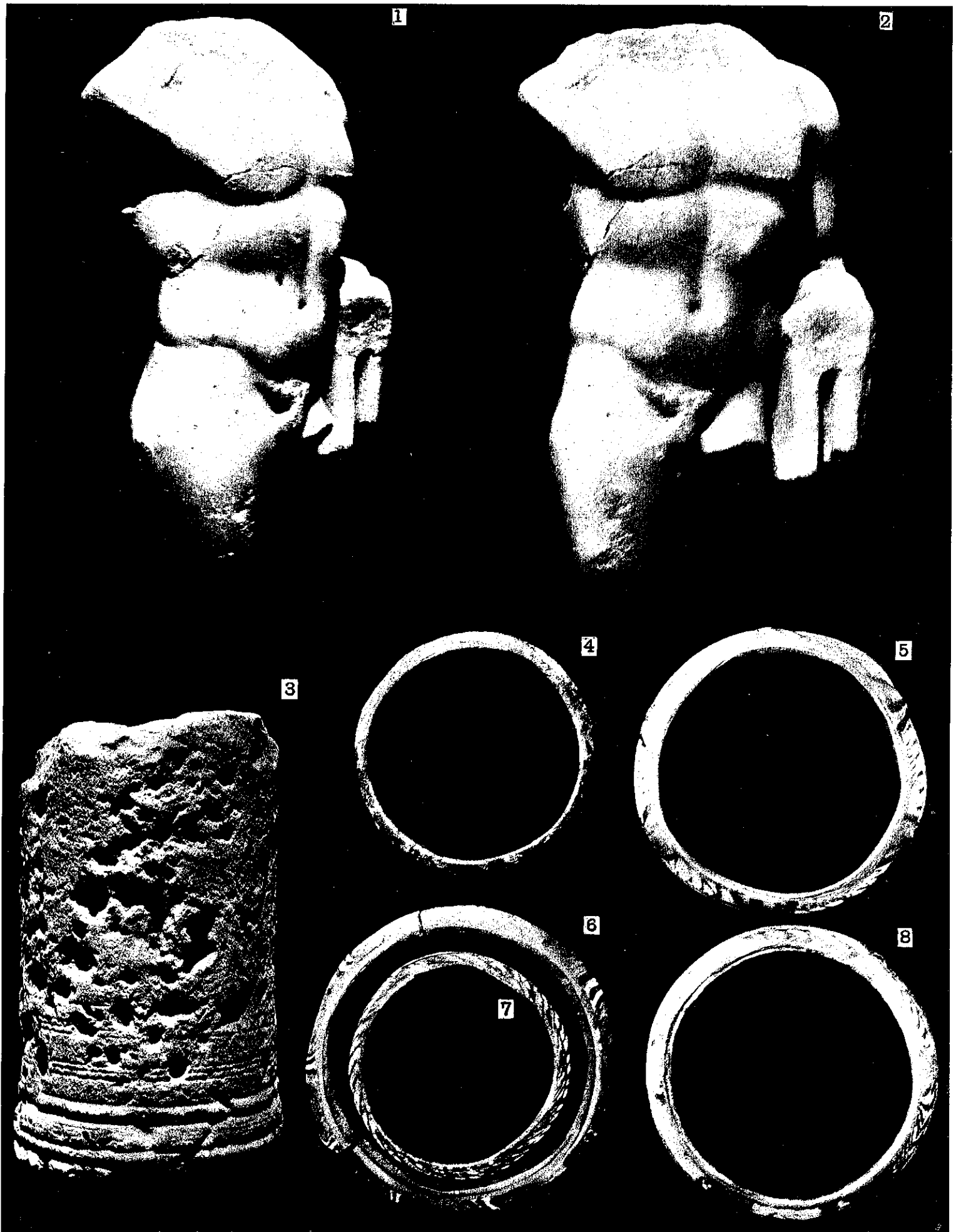
APPROXIMATELY 177 FT = 1500 B.C.; 135, 1200; 190, 950; 194, 800; 199, 650; 204, 450 B.C.





4

5



Q E D E T

Table with columns for material type (e.g., HAEMATITE, LIMESTONE, SANDS), weight, and position/notes. Includes entries for Q, E, D, E, T categories.

KHOIRINE

Table with columns for material type (e.g., LIMESTONE, HAEMATITE, BASALT), weight, and position/notes. Includes entries for KHOIRINE category.

B E Q A

Table with columns for material type (e.g., GRANITE, LIMESTONE, HAEMATITE, TRACHYTE), weight, and position/notes. Includes entries for B, E, Q, A category.

N E C E F

Table with columns for material type (e.g., SANDS, LIMESTONE, HAEMATITE, TRACHYTE), weight, and position/notes. Includes entries for N, E, C, E, F category.

S E L A

Table with columns for material type (e.g., HAEMATITE, LIMESTONE, SANDS, TRACHYTE), weight, and position/notes. Includes entries for S, E, L, A category.

Table with columns: CONTINUOUS REGISTER, MATERIAL, FORM CORPUS, WEIGHT IN GRAINS, MULTIPLE, UNIT OF WEIGHT, POSITION AND NOTES. Includes sub-sections P E Y E M, D A R I C, and S T A T E R.

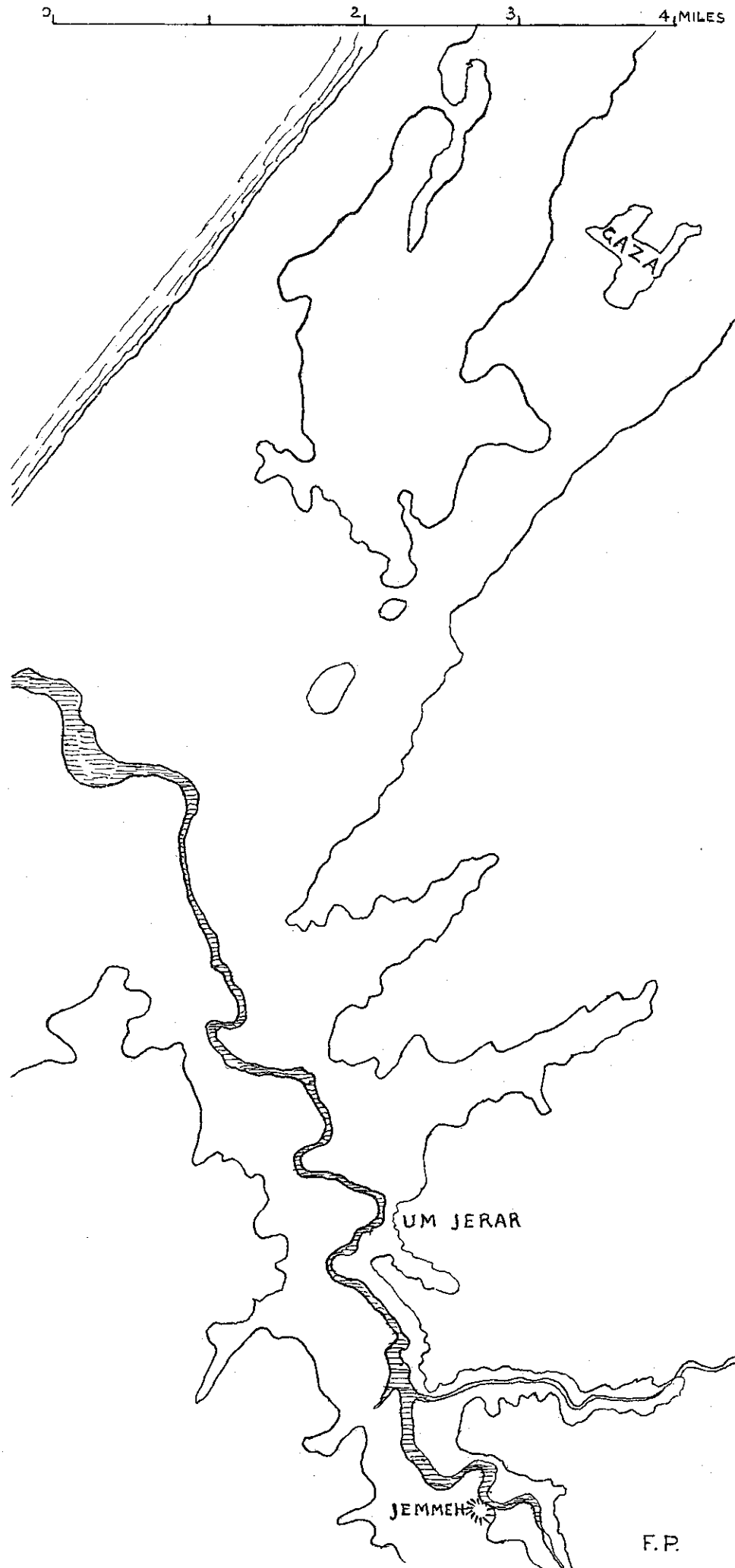




ΠΡΩΤΟΡΟΝΟΣ ΨΙΛΕΒΟΥΑΙ  
 ΟΣΤΕ ΛΕΩΝΣΤΑ ΔΙΟΙΣΙΝ  
 ΑΕΘΛΟΦΟΡΟΙΣΙΝ ΑΓΩΝΑΣ  
 ΩΙΧΕΤΙ ΠΡΟΣ ΔΕΚΑΤΩ  
 ΕΤΟΣΕΒ ΔΟΜΟΝΟΥ ΤΙΤΑΡΕΛΩΝ  
 ΚΑΤΕΤΕΘΗΤΗ ΖΑΝ  
 ΘΙΚΥΣΙ ΤΥΘΑΚΧΕΤΟΥΣ  
 ΙΝ ΔΣΒ



AAO 120 110	WHN 142-5	DE 185-90x98-100
E-DM 110-7	142-150	EJ 185-7x102 <sup>x54-6</sup>
AA 120-2 51	N-BG 145-150	N-EM 190x88-101
BN 122-7	N-BD 145 x75	S-N 190x95-6x55
BCC 124-7	-150	DS 190x90-100x60
BFF 124-6	N-HL 145-150	NW-CR 184-90
BC-BF128	W-CD 145-6	x89-93x55
AW 127-133	BJ-BM 148	N-GO 193x91-5
EJ 130	BX 147x75x55	EY 190-5x90-100
HE 132-4	-155	x50-5
HD 133	E-AF 147x70x52	LA 195x95x60
S-BB132-140	-150-83	S-HD 190x115
N-BQ140	N-CV 148x74x38	FF 190
BB-BL135-140	W-HA148-150	W-EZ 190x110x55
N-AD133-142	BK-BT150-4x75x48	W-FH 190x110
E-AZ 140	S-CB 152	WEE 190-3x108-14
SW-HB136-142	E-CF 152x77	x58-60
E-HB 140 up	W-CG 157x76	N-EE 190-6x102-12
142 low	N-EX 153-4	x62
N-HL138-140	S-HM 155x76	N-FG 192x110-2
S-BB 136-140	CW 148-9x95	W-EA 192x110
BY 136-143	S-CD 160-2x82	W-FE 193x100-12
N-AP 136	E-BL 146-7x141-6	E-GO 193x115x50
-141	x75x52	DR 197-200x105-15
-141	x57	S-EG 199 x50-7
N-AD140-2x70	DB 150x146-8	VDM-DN 185x130
E-AE 140	x38-40	S-EC 188x130
N-AY137x80x50	N-DT 152x142-6	N-GU 188x137
-145	S-CA 153x155x37	S-HD 190x132
W-AY140-3x80	x41	E-EGH 198x92
S-AZ137-140	N-FO 166-8	N-CW 203x91-5
S-AK 138x80x52	x83-107	II FC 196x113-5
-140	x44-58	DR 197-200
S-BS 139-140	N-FJ 167-72x97	x105-15x50-7
BQ-BR139 x52	DK-L 168-76	N-EG 198x107-13
-145	x93-101	S-EG 199 x60-5
W-FJ136x70-1	x56	E-M 200x113-5x55
-148	S-EA 170x100x55	P W 200x124-8x50
E-AD136-143	S-DL 174	L GA
N-AE137-146	N-BQ 165x118-20	S W 200x140-57
BL-BM140-2x75	N-FO 167x112-5	CT x60-3
BE-BA135x85x53	E-EW 169x111-2	T N 212x95-7x50
-146-90	44.53	DG
SW-BL 140x92x55	W-EG 179-4x114	SW-GA 205x100x50
A 138x87x50	x60-7	S N
-143	S-EG 172-5x120	EC 210x122
AAZ 130-6x130-3	x48-50	Φ N 208x130-6
AAO 135x135	N-EP 175	x50
CT 138x135-4.0	N-EK 175-6x104-9	N-GA 210x135
-151 -3	x66	W-GA 210
EV-EW138x136 55	DR 177-82x102-17	W-HP 210-6x130-5
-8	x52	x41
BO 145x133x55	W-EG 182	JL-N 220x135x85
-8	S-FC 182x108x50-5	X S 202x155x65
AP-AQ 142x142	S-GA 182x120x57	JD
	K S-EG 185	SE-GO 208 x50
	W-HD 185x106-10	S-GO 210
	DM-N 185x115	JK-L 210x155x45
	W-EA 186x108x64	W low 210x150
	S-Ed 183x94x60	Y Eq 220x112
	DM 185x95	W-G-E 220x102
	DM-DN 185	x45
	x95x50-8	S-HJ 225x136-50
		x40-8
		W N
		V 235x117x43
		S-GG 250x115x50



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